MENTAL RETARDATION ABSTRACTS

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ACKNOWLEDGEMENTS

The publishers of the following journals have graciously granted permission to reprint abstracts and summaries:

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American Journal of Sociology
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Biologia Neonatorum
British Journal of Psychology
British Journal of Social & Clinical Psychology
British Medical Journal
California Mental Health Research Digest
Canadian Medical Association Journal
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New England Journal of Medicine
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Rehabilitation Counseling Bulletin
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Training School Bulletin

NOTE: Publications scanned regularly for articles pertinent to mental retardation will be listed in the final issue of this volume.

709 DYBWAD, GUNNAR. World-wide developments in mental retardation. In: MacLeech, Bert; Schrader, Donald R.; & MacLeech, Pearl Maze, eds. *Eighth Annual Distinguished Lectures Series in Special Education and Rehabilitation, Summer Session 1969*. Los Angeles, California, University of Southern California Press, 1970, p. 1-20.

The 1960's were important years in the international developments in the field of special education. Declarations by international organizations on the rights of handicapped persons are no longer considered as philosophical statements only. Courts are declaring that there are basic rights inherent for all humans which cannot be taken away. Late in the decade, the United Nations became more active in the field of special education, and international MR organizations, such as the International League of Societies for the Mentally Handicapped and the International Association for the Scientific Study of Mental Deficiency, were formed. Special education has advanced at different rates in different countries; factors which influenced these rates include the economic level of the country, the sociopolitical climate of opinion, the level of medical care, the amount of emphasis on academic achievement, and the varying classifications of MR. No country has reached a satisfactory level of services for all MR of all ages; therefore, international exchange and cooperation remain of primary importance. (25 refs.) - *M. Plessinger*

710 FARRELL, GORDON, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, 256 p. $10.00.

New discoveries concerning congenital diseases that damage the central nervous system were presented at the First International Symposium on Mental Science in 1967 and are now presented in book form. Data are presented on phenylketonuria, homocystinuria, histidinemia, hyperglycemia, abnormal galactose metabolism, and Down's syndrome. Overviews of the relations between chromosomal aberrations and MR, drug treatment of MR, and research in MR are given, and the findings and methodology of screening programs in Massachusetts and at the University of Miami are reported. Sibling data for familial hyperuricemia and Down's syndrome are discussed. The effects of drugs on the offspring of pregnant infrahuman animals and humans are reported as well as the developmental effects of early mother/child relations and early malnutrition. Among the methodologies discussed are techniques for plasma amino acid analysis and for the investigation of the role of monoamine deficiency and its relation to MR, the use of habituation and classical conditioning procedures to assess intellectual deficiencies in neonatal rats, a training program for parents of preschool MR children, and diagnostic procedures for the evaluation of potential intellectual functioning. This book would be of interest to pediatricians, psychiatrists, psychologists, biochemists, neurologists, geneticists, nutritionists, educators, and public health personnel. (470 refs.) - *J. K. Wyatt.*

CONTENTS: Phenylketonuria: Diagnosis, Treatment, and Long-Term Management (Berry); Homocystinuria in Northern Ireland (Carson, Carre, & Neill); Histidinemia to Date (Ghadimi); Recent Observations in Hyperglycinemia (Nyhan & Ando); Abnormal Galactose Metabolism in Man (Donnell, Bergren, & Koch); Familial Hyperuricemia in a Negro Family (Keele, Marks, & Kay); Chromosomal Anomalies and Mental Retardation (Trujillo); Nondisjunction of Chromosome Number 21 in Siblings (Sinha, Cochran, & Cochran); Large-Scale Studies in Massachusetts (Levy); The Chemical Detection of Inherited Disorders That Result in Mental Deficiency (Tocci, Ruiz, & Aquero); A Technique for Semiquantitative Analysis of Plasma Amino Acids (Airaksinen, Farrell, & Johnson); Genetic Malformation Syndromes Associated with Mental

Retardation (Opitz); Transplacental Psychotropic Agents and Mental Retardation (Schoolar); Behavioral Alterations in Infants Born to Mothers on Psychoactive Medication during Pregnancy (Desmond, Rudolph, Hill, Claghorn, Dreesen, & Burgdorff); The Role of Early Mother/Child Relations in the Etiology of Some Cases of Mental Retardation (Freedman); The Effect of Malnutrition on the Physical and Mental Development of Children (Rendon, Hurtado, & Arathoon); Drug Treatment of Mental Subnormality (Claghorn); Preschool for the mentally Retarded: A Training Program for Parents of Retarded Children (Toombs, O'Neill, & Rouse); Experimental Approach to the Role of Monoamine Deficiency as a Cause of Mental Retardation (Airaksinen); Catecholamine Metabolism in Mongolism (Keele, Richards, Brown, & Marshall); A Classical Conditioning Model for the Assessment of Intellectual Deficits in Young Animals (Kilbey); Basic Research in Mental Retardation: An Overview (McIsaac).

711 McISAAC, WILLIAM M. Basic research in mental retardation: An overview. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 22, p. 332-336.

Since 1930, great advances have been made in understanding the genetic code for inherited physical characteristics, and the biochemical bases of a number of syndromes associated with MR have been discovered. Basic research in MR can help in the search for new metabolic errors and new causes associated with MR and can provide laboratory models for the evaluation of hypotheses and therapeutic possibilities. Metabolic errors may affect fundamental processes other than the primary errors of carbohydrate, lipid, and protein metabolism, and their detection will probably require in-depth individual case studies. Further work needs to be done on the effects of nucleic acids on learning and memory, the integrity of the synapse, and the synthesis, release, effectiveness, and metabolism of neurotransmitters. The crucial obstacle to normal cerebral activity in phenylketonuria may be a deficiency in serotonin. Studies indicate that tryptophan as well as serotonin metabolism may be abnormal in Down's syndrome. New compounds, such as oxypertine and p-chlorophenylalanine, can be used to explore the behavioral and learning correlates of specific amine deficiencies. The eventual discovery of compounds that will specifically elevate either brain serotonin or norepinephrine will increase understanding of the relations between brain amines, learning, and retention and may be of great potential therapeutic value. (18 refs.) - *J. K. Wyatt.*

712 BERG, J. M. Research and mental retardation: A commentary. *Deficience Mentale/Mental Retardation*, 19(4):2-5, 1969.

Prevention is the ultimate hope of resolving the problem of MR, since MR is often the irreversible consequence of brain damage or disease. Comprehensive studies of the nature and characteristics of MR are imperative because MR, a symptom, is the end result of a large number and variety of causes. Causal knowledge of one type of MR, such as phenylketonuria (PKU), is not applicable to other types of MR such as mongolism. With the cause of MR still obscure in a substantial proportion of affected individuals, the need for research is vital. Recent advances in medicine, biochemistry, and genetics open new avenues of research. Because MR is also a social, psychological, and educational problem, research in these areas is needed in addition to the medical and biological investigations. (No refs.) - *C. L. Pranitch.*

No address

713 HOFFMAN, JOHN L. The location of missing subjects. *Mental Retardation/MR*, 7(3):18-21, 56, 1969.

Four to 10 years after discharge, some 571 former patients had to be located in the community, as part of a follow-up study. By means of a wide variety of approaches, better than 98% were located. Considered are: the need for locating as many subjects as possible; the methods used in locating them; and the assumptions concerning social network relationship on which the methods are based. (5 refs.) - *Journal abstract.*

Pineland Hospital and Training Center
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714 CHESS, STELLA. *An Introduction to Child Psychiatry*. Second edition. New York, New York, Grune & Stratton, 1969, 263 p. $6.75.

This contemporary textbook is designed to provide basic information in child psychiatry. The major topics including basic techniques, such as history taking and patient interview, are concise and clinically useful. Although the nomenclature follows that outlined by the American Psychiatric Association in its Diagnostic and Statistical Manual II (1968), emphasis is placed on the temperament of the child or his individual behavior style in interaction with the environment (parental,

social, and cultural influences). An extensive section on MR insists that such a diagnosis alone is inadequate and that a behavioral assessment is necessary for each patient in order to provide optimal understanding and treatment. Discussion of genetic factors and treatment modalities is as up-to-date as possible for a standard textbook. Although the experienced clinician may find this text too general and non-technical, it is precisely these qualities which make it ideal for the student of the field. (199 refs.) - *E. L. Rowan.*

CONTENTS: The Role of Child Psychiatry; The Child as a Developing Organism; Genetic Factors in Behavior; The Presenting Problems; Taking the History; The Diagnostic Interview; Special Diagnostic Procedures; Diagnostic Classification; Mental Retardation; Behavioral Disorders Due to Cerebral Dysfunction; Behavior and Character Disorders, Neuroses, and Associated Symptoms; Childhood Schizophrenia and Psychosis; Specific Learning Disabilities; Problems Arising from Special Stress Situations; Adolescent Behavior Problems; Psychotherapy and Related Treatments; Drug Therapy; Inpatient and Outpatient Treatment.

715 SORIA, JOSE; & SELEMO ANTELO, ALBERTO. Epidemiological study of the prevalence of mental deficiency in Pamplona. *Actas Luso-Espanolas de Neurologia y Psiquiatria*, 25(2): 83-101, 1966.

The incidence of MR in Pamplona (Spain) was studied by means of family investigation of 20% of all children born between 1953-1962. The Goodenough, Raven, and Wechsler Intelligence Scale for Children were given to 1,457 children (CA 5-14 yrs). Neurological, motor, and socio-personal maturation were evaluated. It was found that 0.8% of the population has moderate to severe MR. (37 refs.) *A. Huffer.*

No address

716 LIPTON, MAY. The history and superstitions of birth defects: Part I. *Journal of School Health*, 39(8):579-582, 1969.

Births of abnormal children were recorded before man could read or write. Clubfoot, dwarfism, cleft palate, and Siamese twins were depicted by Egyptians, Greeks, Romans, and the Australian aborigines. The Babylonians predicted future events on the basis of more than 60 deformities of the ears, nose, mouth, sex organs, and limbs. Records and interpretations of birth abnormalities continued to spread from one country to another and were accepted by the public, scholars, physicians, and scientists until very recently. Precise observations, handed down from generation to generation, were converted into the incredible superstitions which were prevalent during the Middle Ages and Renaissance, and which still persist. A classic example of a surviving superstition is that a pregnant woman frightened by a rabbit will give birth to a child with a cleft palate. Years of intensive research into heredity and the reproductive processes are needed to disencumber the public of such fanciful theories. (4 refs.) - *C. L. Pranitch.*

National Foundation
New York, New York 10017

717 PAVLOVKIN, M. K diferenciacii mentalne retardovanej mladeze (The differentiation of mentally retarded youth). In: *Bibliograficky Zpravodaje Detska Patopsychologia.* Volume 3. 1967, p. 3-11.

The differentiation of MR children in terms of their mental abilities is a problem for school systems. In general, one group is considered as "below average" and most of these children attend the basic general school because there are no special classes for them. The other group is oligophrenic (or MR) Ss who attend special schools which are conceived of as "monolitha" schools. Improvements of the present system are certainly needed. (1 ref.) - *A. Huffer.*

No address

718 BALTHAZER, EARL E.; & ENGLISH, GEORGE E. *A System for Classifying the Social Behavior of the Severely Retarded.* Madison, Wisconsin. Wisconsin Health and Social Services Department. (Central Wisconsin Colony and Training School Research Findings, Volume 4, Monograph Supplement) 1968, 88 p. (Price unknown).

A multidimensional approach to classify and diagnose the lower ranges of MR involved 288 ambulant SMRs and PMRs (average CA 17.27 yrs). Direct observation of behavior, expressed in raw frequency scores by counting behaviors/unit of time (12, 10 min periods), was employed by raters trained for this purpose. Scores were reciprocally transformed to permit the use of parametric statistics. The 71 behaviors were intercorrelated and were analyzed by factors. Eighteen factors were

retained and used to group all Ss. Ss whose factor scores approximated the mean of the 18 factor scales were labeled the homogeneous group (52% of the total population). They were characterized by inactivity, although their behavior was in no way bizarre. The heterogeneous group had factor scores within one standard deviation (SD) of the factor scales. Their behavior was moderate, although individuals indicated dissimilar and independent behavior. The high frequency group had at least one factor score equal to or greater than one SD from the mean. Ten subgroups were identified. It was possible to rank order the groups and the individuals in them on specific behaviors so that it was possible to identify objectively the emotionally and behaviorally disturbed. (9 refs.) - *K. H. Vogt.*

CONTENTS: Basic Statistical and Computer Studies; Classification System for Ungrouped Behaviors; Grouping and Classification Studies of Subjects; Behavioral Descriptions of the Groups; Discussion; Proportion of Subjects by Groups on all Factor Scales; Mean Factor Scores for All Groups; Appendix I: General Directions to the Rater; Appendix II: Social Behaviors Section.

719 RUTTER, MICHAEL; LEBOVICI, SERGE; EISENBERG, LEON; SNEZNEVSKIJ, A. V.; SADOUN, RAYMOND; BROOKE, EILEEN; & LIN, TSUNG-YI. A tri-axial classification of mental disorders in childhood. *Journal of Child Psychology and Psychiatry*, 10(1):41-61, 1969.

A World Health Organization (WHO) report is presented on psychiatric disorders in childhood and includes classifications and statistics. In a seminar held in Paris in 1967, a triple axis classification scheme was agreed upon for psychiatric disorders in children aged 0-12 years. The first axis of the classification concerns the clinical psychiatric syndrome; the second axis concerns the presence or absence of MR, while the third axis notes any associated or etiological factors. The seminar conducted diagnostic, case history, and video-tape exercises. The topics of discussion included nomenclature and coding, relationships with adult psychiatric disorders, individual diagnostic categories, reactive disorders, normal variations, neuroses, psychosomatic disorders, conduct disorders, disorders of personality, developmental disorders, hyperkinetic syndromes, and psychoses. The seminar was part of a WHO 10-year program (started in 1965) designed to provide a basis for the next revision of the International Classification of Diseases. (11 refs.) - *F. J. McNulty.*

Institute of Psychiatry
London, S.E. 5, England

720 IL'TSCH, S. V. Izuchenie sostava uchashchikhsya vspomogatel'noi shkoly (Study of the make-up of remedial school students). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 88-92.

A scheme is proposed for classifying MR children to perform more detailed studies of each individual. Five forms of MR which are differentiated include: non-development of complex forms of analytic-synthetic activity; cognitive activity on a background of deep disturbance of total behavior; capacity to abstract and generalize with a prevalence of the retardation process; cognitive activity on a background of severe personality retardation, deep changes of system of requirements and motives, and disruption of all emotional-volitional values; and cognitive activity, speech defects, and auricular systems. Under these 5 forms, analyzers, motor, thought, speech, memory, attention, emotions, personality, and behavioral peculiarities are studied. (4 refs.) - *R. K. Butler.*

721 D'YACHKOV, A. I. Zadachi i printsipi izucheniya anomal'nikh detei (Problems and principles of studying anomalous children). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'yikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 3-7.

If an educator wishes to educate a man in all relationships, then he must first know the man in all his relationships. A discussion on the necessity of studying the anomalous child from preschool age until after he has finished school is presented. The study of former school students in actual life situations and during practical activity enables us to know how effectively the anomalous children are included in the productive force and how successfully they learned in school. (1 ref.) - *R. K. Butler.*

722 PEVZNER, M. S. Znachenie klinicheskogo issledovaniya v oblasti defektologii (Value of clinical studies in defectology). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 8-14.

The clinical method of studying MR is separated into 2 parts--the factual data obtained about the S and an analysis of all obtained data on the child with its subsequent work-up. A truly genuine clinical analysis of various forms of anomalous children gives the possibility of finding adequate scientifically based methods of compensating different defects and, therefore, is an important method of study in defectology. (8 refs.)
R. K. Butler.

723 LUBOVSKII, V. I. Fiziologicheskie metodi issledovaniya v defektologii (Physiological methods of study in defectology). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 15-23.

Physiological methods in defectology are applied in 3 specific areas: disclosing the physiological mechanism of disturbances of one or another form of activity (which facilitates understanding the essence of the defect); diagnostics; and studying the possible ways and means of compensation. Methods using the EEG, tentative reactions, and motor condition reflex with oral reinforcement are discussed in detail. Studies carried out by these methods allow the establishment of some peculiarities of higher nervous activity general for all MR children as well as characteristics for specific clinical variants of MR. In the future these methods must find a broader application for explaining possibilities and ways of compensating for child anomalies. (5 refs.) - *R. K. Butler*

724 EIDINOVA, M. B. O lechebno-pedagogicheskoi rabote s anomal'nymi det'mi (Medical teaching work with anomalous children). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 24-26.

All people who take part in working with MR Ss should be unified by a single principle--the reclamation of the MR. The study of MR must be carried out with the aims of reducing and compensating for the functional disturbance. It is necessary to begin the studies at an early age. A neuropathologist should aid the educator in the analysis of the poor progress of the child. If the proper use of drugs is applied, the educator's work will be more effective. Each anomaly in the child's development has its own peculiarity and requires adequate pathogenetically-based methods of medical-remedial work. All work with anomalous children must be carried out as medical-teaching, and all institutes for these children should be not only educational, but also medical. (No refs.) - *R. K. Butler.*

725 GOL'DBERG, A. M. O trebovaniyakh k izucheniyu anomal'nikh detei v protsesse obucheniya i vospitaniya (Requirements for studying anomalous children during their education and teaching). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods for Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 27-36.

When studying anomalous children, it is necessary to have a systematic, regular, and multi-faceted plan. The information must be complete and give reasons for the defects; it must classify the Ss according to age, general type of defect, and specific problems. A discussion of problems and errors that occur as a result of not following up on all points of the study is presented. (14 refs.)
R. K. Butler.

726 PASAMANICK, BENJAMIN. A tract for the times: Some sociobiologic aspects of science, race, and racism. *American Journal of Orthopsychiatry*, 39(1):7-15, 1969.

The question of whether or not Negroes are genetically inferior to whites in intelligence has been debated for 75 years. Perhaps it is time to end the debate. Research has consistently shown that as samples of Negroes

approach sociocultural equality to whites, significant differences in physical growth, morbidity, infant and maternal mortality, and intelligence cease to exist. Further research is not needed. What is required is a rechanneling of national resources to deal with the urban, national, and global crises at hand. (13 refs.) - *J. M. Gardner.*

New York State Department of Mental Hygiene
New York, New York

727 GORDON, JOHN E. Social implications of nutrition and disease. *Archives of Environmental Health*, 18(2):216-234, 1969.

Malnutrition and infectious disease are closely associated, mutually synergistic, and limiting factors in the social and economic progress of underdeveloped countries. Environment, economic conditions, social habits, and cultural taboos and customs further worsen the effects of malnutrition and infections. These disorders not only prevent physical growth and development but also impair mental development, particularly in the first 2 years of life. Improved medical care will decrease the death rate; however, morbidity will persist at a high level. The quality of the survival then becomes increasingly significant; many now will live who formerly would have died. Their physical development, mental ability, and creative capacity will affect the socioeconomic progress within a population. Improvement of health services and the economy in less privileged countries is a great task, and progress is, at best, painful and slow. (37 refs.) - *L. S. Ho.*

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Cambridge, Massachusetts 02139

728 BALTHAZAR, EARL E.; & STEVENS, HARVEY A. Scalar techniques for program evaluation with severely mentally retarded. *Mental Retardation/MR*, 7(3):25-28, 43, 1969.

Because of the requirements imposed by comprehensive programs for severely and profoundly retarded individuals, the *Central Wisconsin Colony Scales of Adaptive Behavior* were developed. Present findings relate to the profile score categories obtained from the *Scales* as they apply to an ambulant, SMR, residential population. Additional findings are concerned with interrater reliability studies and with data provided by a concurrent validity study. In general, the preliminary statistical data were quite consistent and supportive. Further studies are concerned with current investigations of the metric properties of the *Scales*. (7 refs.) *Journal abstract.*

Central Wisconsin Colony and Training School
Madison, Wisconsin 53704

729 SOCIAL AND REHABILITATION SERVICE. *International Research and Demonstration Projects*. Washington D. C., U. S. Government Printing Office, Superintendent of Documents, 1970, 50 p.

A total of 232 overseas research and demonstration projects are being supported by the Social and Rehabilitation Service. The cooperating countries and number of projects range from Burma with one project to India with 72. Funds are available only in "excess currency countries" as designated by the U. S. Treasury Department. Grants are supplied to governmental and private non-profit institutions that submit sound research programs which have received official sanction. An expert interchange program provides continuing consultation, evaluation, and project information exchange. Research projects include projects on aging, chronic illness, alcoholism, burns, leprosy, cardiovascular disorders, community planning, social welfare policy, family life, general rehabilitation, mental illness, MR, neurological and neuromuscular disorders, prosthetics and orthotics, respiratory disorders, speech, hearing, training and employment of social workers, visual defects, and youth and delinquency. (No refs.) - *V. G. Votano.*

730 AYERS, GEORGE E., ed. Program Developments in Mental Retardation and Vocational Rehabilitation (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference held Boston, Massachusetts, April 30-May 4, 1968). 64 p. Mimeographed.

Noteworthy program developments in rehabilitating the MR, training professional personnel, and research in vocational rehabilitation and MR are discussed. Organizational details, evaluation and image, federal grants and agency structure must be considered when planning in-service training. Two approaches to in-service are spaced-training and community-action institutes. A 6-month program to train individuals to work with MRs at the nonprofessional level is described. There are no state laws requiring cooperation between special education and rehabilitation agencies although most agencies cooperate in

some manner. A cooperative school-rehabilitation program permits optimal programing for EMRs by utilizing consultive and financial support from both agencies. Cooperation is hindered by a lack of state guidelines, lack of qualified rehabilitation personnel, and lack of interagency and community communication. Also discussed is the Wells Concrete Directions Test, an instrument for predicting potentially competitive employees working in sheltered workshops. The document will be of value to rehabilitation counselors, educators, administrators, and social workers. (No refs.) - *C. L. Pranitch.*

CONTENTS: The Education of a Training Center Staff (Jaffe); A Strategy for Multi-disciplinary Research on Behavioral Ecology of the Mentally Retarded (Crosson); The Advantages of Spaced-training in In-service Education (Baroff); In-service Training of Community Personnel: A Community Approach (Wall); The Training of Non-professional Workers in Mental Retardation (Baker & Flanigan); Strategies for Evaluation of Short-term Training (Dickerson); The Status of Cooperative Programing at the State Level--A National Survey (Younie); Rehabilitation Programs and Services in Schools Developing a Statewide Plan for Work-study Programs (Breeding); Indiana's Work-oriented Program for Educationally Handicapped Students in Secondary Schools (Brinegar); The Marginally Competitively Employable (Ferguson).

731 SIROHI, NARENDRA S. A report on the Institute of Defectology. Moscow, Union of Soviet Socialist Republics. *Papers in Psychology*, 1(2):34-38, 1967.

The Institute of Defectology in Moscow, which is research oriented, concentrates on MR, deafness, blindness, motor deficits, speech defects, and reading problems. A variety of study methods are utilized--medical, psychological, psychiatric, and pedagogic. The objective in each case is to arrive at a precise and accurate diagnosis and to discover appropriate treatment which will correct the defect. MR is apparently confined to brain damage and disease. (No refs.) - *A. Huffer.*

No address

732 SECRETARY'S COMMITTEE ON MENTAL RETARDATION. *Mental Retardation Grants: Fiscal Year 1969*. Washington, D. C., U. S. Health, Education, and Welfare Department, 1969, 73 p.

Mental retardation grants awarded by the U.S. Department of Health, Education, and Welfare during fiscal year 1969 (July 1, 1968 to June 30, 1969) are listed by title, name and address of the grantee, the amount of the grant, and the agency making the award. Construction and training grants (listed by state) were awarded to all 50 states, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. Research and demonstration grants (awarded to 40 states, the District of Columbia, Puerto Rico, Chile, Greece, Jerusalem, Mexico, Netherlands, and Switzerland) are listed according to focus of the grant: etiology (107 grants), epidemiology (5 grants), pathophysiology (127 grants), diagnosis and/or evaluation (19 grants), prevention (6 grants), amelioration (3 grants), amelioration-education (40 grants), amelioration-vocational rehabilitation (18 grants), amelioration-medical treatment (14 grants), and others (38 grants). Abstracts and a subject index are provided for the research and demonstration grants. (No refs.) - *A. Huffer.*

733 ROSENBERG, BERNARD. A new source of manpower: The mentally retarded. *Personnel Administration*, 30(6):15-18, 1967.

The MR can be considered as a manpower source. Basic concepts to consider in hiring the MR include: responsibility, dependability, employee reaction, turnover rate, and work skills. For the MR, all these are favorable. (No refs.) - *A. Huffer.*

No address

734 GANDHI, J. S.; & AGRAWAL, K. G. Attitude of public towards the mentally retarded. *Indian Journal of Mental Retardation*, 2(1):21-25, 1969.

An increased public awareness of MR in India has led to a demand for more special schools and jobs. A 50-question inventory on attitudes toward MR was given to 100 middle class educated Ss in Delhi. The Ss were found to have a good attitude toward MR although they believed the MR were insane. Those interviewed felt that special schools for MR were necessary and MRs were capable of employment. Although MRs were not felt to be

criminal or bad, most of those interviewed thought that MRs should not marry. (5 refs.) *M. Plessinger.*

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Chandigarh-22, India

735 KENNEDY, EDWARD M. Does anybody care? *Mental Retardation/MR*, 7(2):53-55, 1969.

It is time for organizational planning in the field of MR to stop; for 25 years, we have been organizing for action, and it is now time to act. Knowledge, research, and organizations already in existence must be utilized to overcome the apathy prevalent in this country. All states should have mandatory laws for PKU testing, measles and rubella vaccination, and special education programs. No state has the right to feel smug about its accomplishments; all states can improve their programs. Although most MRs can be educated for employment, there is a woeful lack of training facilities. Professional organizations could be vital in the war on MR; however, they have not yet lived up to expectations. (1 ref.) - *M. Drossman.*

Senate Office Building
Washington, D. C.

736 PRESIDENT'S COMMITTEE ON MENTAL RETARDATION; & EDUCATION FOR THE HANDICAPPED BUREAU. *The Six-Hour Retarded Child.* (A Report of a Conference on Problems of Education of Children in the Inner City held Warrentown, Virginia, August 10-12, 1969.) Washington, D. C., U. S. Government Printing Office, Superintendent of Documents, 1970, 32 p. (Free single copies available from the sponsering agencies.)

The inner-city child who is black, brown, red, or white and who lives in poverty becomes in fact a "six-hour retarded child--retarded from 9 to 3, 5 days a week" because he is segregated by IQ scores which have no relation to his adaptive behavior which may actually be exceptional. These are the functionally retarded children (as opposed to organically retarded children) who are the products of the low socioeconomic conditions of their families. Areas of concern are the type of special education needed by these children, the role of the schools in society, and the improvement of the quality of education and life in the inner city. A 2-day conference on the 6-hour retarded child recommended that: early childhood stimulation, education, and evaluation should be provided as part of the continuum of public education; inner-city families who have coped effectively with their environment be studied; the education of teachers, administrators, and counselors in the field be restructured; the present system of IQ testing be re-examined; sufficient funds be alloted to do a proper job; and parents, the public, and educators be involved in the total educational effort. (No refs.) - *M. Drossman.*

737 LELAND, HENRY. Coping with tomorrow: Problems of children and youth. In: MacLeech, Bert; Schrader, Donald R.; & MacLeech, Pearl Maze, eds. *Eighth Annual Distinguished Lectures Series in Special Education and Rehabilitation, Summer Session 1969.* Los Angeles, California, University of Southern California Press, 1970, p. 34-49.

The solution to the current and projected population explosion in the United States is not to deprive people of life or to prohibit childbearing, but to develop new ways whereby large numbers of people can live close together. Tomorrow must be a time when people in close proximity can live, work, and love together peacefully. Mankind, in the past, has been able to adapt to his environment, learn from his errors, and improve his life; however, universities and communities today are failing to cope. Professionals in MR bring MR children up to a level of adaptive behavior in which they live successfully in a community; however, professionals in universities, clinics, and communities do not appear to be aware that they, too, can bring normal persons to a comparable level of adaptive behavior. The practical implementation of research in the social sciences is the major challenge to the universities, and only through meeting this challenge will there be an end to the barbaric practices of genocide and war. (4 refs.) - *M. Drossman.*

738 AUSTRALIAN COUNCIL FOR REHABILITATION OF DISABLED. *Handicapped Youth: Preparation for Life and Work*. (National Rehabilitation Conference held University of New South Wales, Sydney, Australia, May 26-30, 1969.) Sydney, Australia, 1969, 413 p. (Price unknown).

The 1969 National Rehabilitation Conference of the Australian Council for Rehabilitation of the Disabled concerned itself with handicapped youth and their social, educational and vocational preparation for life. The challenge is to expand services, improve the quality of programs, become more cognizant of the special needs of the handicapped, and utilize new concepts and techniques to attain the goal of an approved national policy for provision of total services for handicapped youth. The partnership concept is emphasized. Parents also need to be significant members of a team approach. Public education geared toward employment is discussed as well as an appreciation of the roles of the medical, paramedical, teaching, and administrative professions. The Conference concluded that it is the community's responsibility to see that handicapped youth are accepted in productive and beneficial roles in the community. A partnership must exist between public and voluntary organizations, and methods of achieving planning and coordination must be found. More cooperation is needed with a complete continuum of services if rehabilitation is to be successful. Rehabilitation workers should try to increase their professional skills and strengthen their understanding of the handicapped. Trained staff and improved efficiency of existing services are needed. Government must give higher priority to problems facing the handicapped, and the public must be educated as to the problems of disabilities due to changing technology. (151 refs.) - *S. Half.*

CONTENTS: Prevocational Preparation; Assessment and Counseling; From School to Work; Vocational Training and Employment of Handicapped Youth; Visually Handicapped; Hearing Impaired; Physically Handicapped Youth; The Intellectually Handicapped in the Transition from School to Work; Maladjusted; Epileptics; Specialized Education and Training of Staff to Work with the Handicapped, Especially Adolescents: The Current Situation in Australia; Preparation of Teachers for Work with Handicapped Youth; Training of Counselors (Clinical, Educational and Vocational) for Work with Handicapped Youth; Training of Social Workers and other Social Welfare Staff to Work with Handicapped Adolescents and Their Families; Training of Hostel and Other Residential Care Staff for Work with Handicapped Youth; Training of Physiotherapists for Work with Handicapped Chileren; The Occupational Therapists' Contribution in Preparing Handicapped Youth for Life and Work; Training of Speech Therapists in Relation to the Rehabilitation of Handicapped Youth.

739 STOLLER, A. Creating the life style for the intellectually handicapped. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work*. (National Rehabilitation Conference held University of New South Wales, Sydney, Australia, May 26-30, 1969.) Sydney, Australia, 1969, p. 108-114.

The creation of a life style for the MR individual may be highly successful in enabling the MR to become productive citizens in the mainstream of society. The MR preschool child can best be helped by early detection, diagnosis, and intervention. The public health service, well-baby clinics, and diagnostic treatment centers play significant roles in the life of the MR and their families. In a few cases, temporary and short-term placement might be necessary, particularly in a family crisis situation. There is a need for trained baby-sitters and preschools where an MR child can develop social skills. Behavior modification programs, day-training centers of special classes in schools, speech training and personal-care classes are also needed. Parents can benefit by psychiatric consultation in terms of acceptance, management, handling, control, and understanding of their MR offspring. For the adolescent MR, prevocational training programs should be available as well as employment counseling and job placement. Structured socialization and recreational programs are necessary, and the MR must have an opportunity to develop meaningful interpersonal relationships. Sheltered employment is needed by the adult MR, and evening education programs may be feasible for less retarded mature adults. Medical needs should not be overlooked as the MR becomes older. Appropriate and adequate legislation should meet the total needs of the MR throughout their life. For the TMR, sheltered workshop situations are more desirable; whereas, for the EMR, a factory-type atmosphere can be provided, and some EMRs can be placed in competitive employment. A continuum of services must be made available if the MR are to grow and develop to their maximum potential. (18 refs.) - *S. Half.*

740 EGG, MARIA. *The Different Child Grows Up*. New York, New York, John Day Company, 1969, 128 p. $3.95.

This basic guide to the problems of adolescent and adult MRs contains data on puberty, sex education, marriage, employment, emotional maturity, traffic education, institutions, recreation, family life, and old age. Although educational goals for MR children have become clearer, more precise, and more realistic in recent years, childhood training alone does not solve the problems of the MR. Since childhood is the shortest span of life, education and training should focus on preparation for a regular occupation in adulthood. MR youths must be trained to adjust to society so that they can bear their conflicts with the normal world with love and understanding. They should be prepared for meaningful employment which will provide them with honest achievement and recognition from others. Since MRs cannot complete a regular vocational training course because of their limited comprehension and manual dexterity, vocational training should be provided by an apprenticeship in a sheltered workshop. Additional sheltered workshops which will provide employment and continuing learning experiences for adult TMRs for an unlimited number of years are needed. The life expectancy of this generation of MRs is higher than that of earlier generations; therefore, provisions must be made for the care and housing of retarded adults. This book would be of interest to parents of MRs, psychologists, special educators, and recreation specialists. (No refs.) - *J. K. Wyatt*.

CONTENTS: Stepchildren; How Common Is Mental Retardation? They Too Are Growing Up; Puberty; Sex Education; Marriage; On the Street; Emotional Maturity; Occupations for Retarded Adults; The Institution; The Handicapped Adult in the Family; Apprenticeship; The Sheltered Workshop; Leisure Time; Where Do We Go from Here?

741 BOWLEY, AGATHA H.; & GARDNER, LESLIE. *The Young Handicapped Child: Educational Guidance for the Young Cerebral Palsied, Deaf, Blind, and Autistic Child*. Second Edition. London, England, E. & S. Livingston, 1969, 167 p. $8.25.

An overview (designed primarily for parents of handicapped children) of the literature and research on cerebral palsied, deaf, blind, and autistic handicapped children is presented. Included for each handicap is a discussion of the incidence, etiology, and variants as well as specific learning disabilities associated with each. Of particular importance is the section on the problems which parents can expect to face and general advice and guidance for overcoming or compensating for them. There is a thorough discussion of the early care and training of the child with emphasis on the responsibilities of the parents, therapists, and the child himself. The allowance of independence by the child was advocated. Language stimulation was emphasized also because it is through language development that intelligence can be fully utilized. Underlying the entire training process was the concept that the child should be treated first as a child and only secondly as handicapped. Innovations in aiding the handicapped are mentioned in conjunction with day and residential school programs and their integration with at home care. General guidance is provided as to what time in the child's life specific programs should begin and what they can be expected to accomplish. Following each chapter are organizations and literature concerned with each handicap. Pictures and illustrations are included. (68 refs.) - *K. H. Vogt*.

CONTENTS: The Young Cerebral Palsied Child; The Young Deaf Child; The Young Blind Child; The Young Autistic Child.

742 DUYCK, E. M.; VAN HAESEBROUCK, G.; DE BETHUNE, G.; & DE ZEGHER, A. Commentaires des resultats d'une enquete sur l'enfance handicapee dans la communaute europeenne (Comments on the results of an inquiry on handicapped children in the European community). *Acta Paediatrica Belgica*, 23(2):69-102, 1969.

Comments on a program (planned in 1967) for dealing with handicapped children within the European community are discussed. Under the guidelines proposed, the children would be classified as to whether their handicap was of somatic or psychic origin. This means of classification neglects the possible effects of multiple handicaps and might tend to focus excess emphasis on one aspect of their disability. Organizations existing at present for dealing with the handicapped are insufficient as well as disorganized, fragmented, and poorly planned. The best interests of society and of the handicapped child would be served by a multidisciplinary agency serving the European community. This would unify the numerous smaller agencies under a central organization. The pediatrician would coordinate efforts toward the child and supervise therapeutic and educational efforts. (13 refs.) - *M. G. Conant*.

35 A. Liebaertlaan
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743 WOLF, JAMES M.; & ANDERSON, ROBERT M. *The Multiply Handicapped Child*. Springfield, Illinois, Charles C. Thomas, 1969, 468 p. (Price unknown).

To meet the needs of individuals who serve exceptional children in any capacity, the knowledge of a number of authors from different disciplines has been organized into 5 parts. Part 1 includes an overview of the multiply handicapped (MH), a general review of the literature, and the reasons for the increased number of MH children. Part 2 is devoted to incidence and prevalence studies on MH children. Part 3 describes modifications of special educational procedures to serve the MH; including experimental programs for the blind MH child. Part 4, concerned with psychological evaluations of MH, focuses primarily upon testing the cerebral palsied or blind child. In part 5, the need for more precise definitions, terminology, and nomenclature is expressed. Also stressed is the need for a comprehensive taxonomy and more appropriate pedagogy for MH children. This book should be a valuable reference tool of great interest to psychologists, social workers, teachers, special education majors, physicians, rehabilitation counselors, physical therapists, and parents of MH children. (1,157 refs.) - *C. L. Pranitch*.

CONTENTS: The Multiply Handicapped Child: A Medical and Educational Challenge; Incidence and Prevalence Studies; The Multiply Handicapped Child in Special Education; Evaluating the Multiply Handicapped Child; A Theoretical Framework for the Multiply Handicapped Child.

744 WOLF, JAMES M.; & ANDERSON, ROBERT M. The multiply handicapped child: An overview. In: Wolf, James M.; & Anderson, Robert M., eds. *The Multiply Handicapped Child*. Springfield, Illinois, Charles C. Thomas, 1969, Chapter 1, p. 7-40.

Improved medical care, the expanding birth rate, and reduced infant mortality are some of the factors which increase the number of multiply handicapped children (MHC). Seven traditional categories of exceptionality provide 42 different dyads of disabilities, in addition to multiple disabilities with cerebral palsy, visual impairment, hearing impairment, and MR. Research indicates: inconsistencies in reported incidence and prevalence of multiple disabilities; a lack of theoretical concepts concerning multiple disabilities; confusion on definitions, classification, and terminology; and inadequacy of a rationale in assigning priority to a disability. The term cerebral palsy is often used to designate any paralysis, weakness, or uncoordination of the motor system due to brain pathology. Although different definitions exist for MR, approximately 1/4 to 1/2 of all MRs can be considered MHC. There is a lack of precise methodology in teaching MHC as well as conflicting viewpoints as to which facilities are most appropriate and the extent and availability of such facilities. The complex educational problems presented by MHC and the increased number of such children create a demand for additional research in the disciplines of medicine and education. (No refs.) *C. L. Pranitch*.

745 TARNOPOL, LESTER, ed. *Learning Disabilities: Introduction to Educational and Medical Management*. Springfield, Illinois, Charles C. Thomas, 1969, 389 p. (Price unknown).

Research knowledge on learning disabilities in children who are not MR is synthesized in this multidisciplinary text. Learning disabilities are related to minimal brain dysfunction; distorted visual perception; motor, balance, and laterality problems; auditory perceptual problems; delayed or retarded speech or language development; difficulties with concept formation; and hyperactivity. Children with suspected learning disabilities should have medical and behavioral evaluations. The presence of any of the major signs and symptoms of minimal brain dysfunction should be noted. Assessment procedures for case finding and the evaluation of auditory processes, visual perception, the dyslexias, and language are discussed. The earlier the diagnosis of learning disabilities, the better the prognosis. Adequate services are all-important during the early years and should include medical care, adjustments in family living, training, education, and help in the development of social relationships. Although some children with minimal brain damage adapt well to the world as adults, there is evidence that others are apt to become character problems, criminals, alcoholics, or borderline-adjusted adults. The findings of a 3-year study of delinquency and learning disabilities indicate that a significant degree of minimal brain dysfunction exists in the minority, delinquent, school dropout population. This book would be of interest to educators, special educators, psychiatrists, psychologists, physicians, pediatricians, and neurologists. (341 refs.) - *J. K. Wyatt*.

CONTENTS: Introduction to Children with Learning Disabilities (Tarnopol): A New Look at Learning Disabilities (Clements); Parent

and Professional Relations (Tarnopol); Children with Minimal Brain Dysfunction--A National Problem (Masland); The Physician's Role in Early Diagnosis and Management of Learning Problems (Kurlander and Colodny): Rehabilitation, the Community and the Child with Learning Disabilities (Knott); The Psychologist and Case Finding (Clements); Testing Children with Learning Disabilities (Tarnopol); Auditory Processes in Children with Learning Disabilities (Zigmond); Visual Perception and Early Education (Frostig and Maslow); The Dyslexias--A Psycho-educational and Physiological Approach (Springs); The Illinois Test of Psycholinguistic Abilities: Implications for Diagnosis and Remediation (Lamb); Reading: A Controversial View--Research and Rationale (Bateman); Delinquency and Learning Disabilities (Tarnopol); Case Finding and Treatment: The Teacher (Cronin); Administration of a Program (Levine): Michigan's Perceptual Development Program (Lukens).

746 *Concilium Paedopsychiatricum*. (Proceedings of the 3rd European Congress of Pedopsychiatry, held Wiesbaden, West Germany, May 4-9, 1967.) Basel, Switzerland, Karger AG, 1968, 554 p. $20.40.

The Third European Congress of Child Psychiatry found interested professionals participating in group discussions, round-table discussions, and working sessions about the present state of child psychiatry in Europe. European child psychiatry was found to be clinically oriented in the areas of neurology, pediatry, endocrinology, growth, and neurosurgery. A continuing struggle for clarification of nosology for the atypical child was noted. In addition, aspects of child psychiatry as related to infant development, special education, psychotherapy, MR, criminality, professional organizations, and the mass media were investigated. (227 refs.) *M. D. Nutt.*

CONTENTS: The Time Factor and Predisposition; Pedagogical Therapy and Psychotherapy; Somatic Therapy; Psychoses in Oligophrenic Subjects; Group Discussion: Psychotherapy and Penology; Group Discussion: Mental Hygiene and Societies for Mentally Handicapped Children; Group Discussion: Mental Hygiene and the Mass Media.

747 SOCIAL AND REHABILITATION SERVICE. *The Goal Is: Mobility*. Lauder, Ruth, ed. Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1969, 72 p. $0.40.

Because of architectural barriers in housing, public places, and transportation and recreational facilities, many of the 30 million disabled and aged are no longer able to enjoy mobility. Recent legislation provides for eligibility of disabled persons in the occupation of senior citizen housing, in loans for remodeling which would aid the handicapped, and in reduced interest rates. Many housing features needed by the disabled are desired by the able-bodied, and with this in mind, the increased cost of barrier-free housing is negligible. Special features should include non-slip floors, elimination of stairs, adjustable shelving, and low electrical switches. Problems which could be eliminated in public places are street curbs, small parking areas, lack of resting places, small elevators and restrooms, and high water fountains and telephones. It is important that schools and universities work toward barrier-free buildings. Many of the disabled rely on public transportation; therefore, improvements could be made by providing sheltered benches, automatic subway gates, no-step buses, well-spaced poles to grasp, computerized speeds to prevent swaying, more doors, and better fare-collection methods. More people could enjoy recreational facilities if ramps were installed at entrances to beaches, pools, camping sites, stadiums, and playgrounds. Bowling alleys, gymnasiums, movies, libraries, and restaurants must work to become barrier-free. In order to gain mobility for the disabled, architects must be educated, watchdog committees must be established, and building standards must be enforced. (No refs.) - *V. G. Votano.*

748 BALTHAZAR, EARL; STEVENS, HARVEY A.; & GARDNER, WILLIAM. *International Bibliography of Literature of the Emotionally and Behaviorally Disturbed Mentally Retarded: 1914-1969*. Madison, Wisconsin, Wisconsin Health and Social Services Department. (Central Wisconsin Colony and Training School Research Findings, Volume 5, Monograph Supplement.) 1969, 88 p. (Price unknown).

This bibliography is designed to serve administrators, nurses, psychiatrists, psychologists, social workers, and teachers as a basis for the study of behavioral and emotional problems associated with MR. It excludes references relating to pharmaceutical control of behavior and many dealing with

education, measurement, and remedial effects of the behavioral disciplines. The distribution of the 329 citations by year is: one each from 1914, 1919, 1923, 1925; 8 from 1930-1939; 22 from 1940-1949; 74 from 1950-1959; and 221 from 1960-1969. A combined author-subject index is provided. (329 refs.) *A. Huffer.*

749 MUJOO, H. N.; SHUKLA, S. K.; & GUPTA, T. P. Literature on mental retardation: I. *Indian Journal of Mental Retardation*, 2(1):39-62, 1969.

The references in this bibliography were selected from *Psychological Abstracts* (1927-1931). Twenty-one references occurred in the 1927 volume as compared to 105 in 1930. In addition, 250 references appeared under the category "nervous and mental disorders," and 48 appeared under "educational psychology". (339 refs.) - *A. Huffer.*

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750 JABLONSKI, STANLEY. *Illustrated Dictionary of Eponymic Syndromes and Diseases and Their Synonyms*. Philadelphia, Pennsylvania, W. B. Saunders, 1969, 335 p.

This dictionary includes the eponymic names of pathological conditions named after their discoverers, literary and mythological characters, and patients which have appeared in the literature at least twice. Typical entries consist of a list of all available eponyms, important diagnostic signs, recent data on symptoms, pathology, metabolism, etiology, genetics, special peculiarities, non-eponymic synonyms, and a bibliography. Disorders which affect several organ systems and/or resist verbal description are illustrated. The definitions are intended to form a composite picture representing the viewpoint of various disciplines and are based on a systematic examination of current authoritative material. This book would be of interest to pediatricians, psychiatrists, physicians, psychologists, and nurses. (2,382 refs.) *J. K. Wyatt.*

751 *Bibliograficky Zpravodaj Detska Patopsychologia (Bibliography of Child Pathopsychology)*. Bratislava, Czechoslovakia. Odborove Strediska, Vedeckych Informakii Vudpap. Volume 3, 1967, 116 p.

This bibliography is divided into 2 parts--a bibliography of Czechoslovakian literature (76 items) and a bibliography of world literature (288 items). Both sections include information on brain damage, visual, auditory, speech and motor disorders, MR, psychological deficit, emotional and social disturbances, psychotherapy, sexual deviations, delinquency, psychiatric morbidity, and psychosomatic disorders. The MR sections include 3 items from Czechoslovakia literature and 145 from the world literature. (364 refs.) - *A. Huffer.*

752 OKRUHLICOVA, L. V znan bibliografie prep anonunie v deckho vykumu (The meaning of bibliography for scientific research planning). In: *Bibliograficky Zpravodaj Detska Patopsychologia (Bibliography of Child Pathopsychology)*. Bratislava, Czechoslovakia. Odborove Strediska Vedeckych Informakii Vudpap. Volume 3, 1967, p. 11-20.

The increase in literature in recent years makes a special bibliography a necessary means of communication. Although special bibliographies in psychology and other social sciences have not yet been systematically compiled in Czechoslovakia, there is now a beginning which includes the psychological literature in Czechoslovakia between 1918-1948. In compiling these bibliographies, cooperation between the scientists of the various countries is a necessity. (16-item bibliog.; 7 refs.) - *A. Huffer.*

MEDICAL ASPECTS--DIAGNOSIS (GENERAL)

753 HODGMAN, JOAN E. Clinical evaluation of the newborn infant. *Hospital Practice*, 4(5):70-73, 78-80, 84-86, 1969.

At the University of Southern California Medical Center, where approximately 12,000 infants are born each year, the newborns are classified on the basis of their maturity--normal term with appropriate weight, premature (<37 wks gestation) weighing <2,500 grams, big premature weighing >2,500 grams, and "undergrown" term (gestation >37 weeks) weighing <2,500 grams. The mortality rate is highest for the smallest, true prematures and lowest for >2,500 gram term infants. The abnormal, small term babies are separated into 2 groups: those who are abnormal but encountered a normal intrauterine environment, such as inherited defects; and those who are normal but had an abnormal intrauterine environment, such as a baby born to a mother with toxemia. Clinical characteristics for differentiation include: the undergrown term baby seems long and skinny while the premature's skin has a "better fit;" the premature's skin appears more transparent and gelatinous and less dry, flaky, and wrinkled than that of the other classifications; a smooth, wrinkle-free sole of the foot seen during the first 24 hours is a sign of immaturity; the premature's hair is more fuzzy than that of the others; and the premature's posture and spontaneous movements are different from those of the normals. Nursery care is organized in terms of the 4 categories because different infants require differential nursing procedures; for example, the undergrown baby needs to be fed more often than the premature of the same weight. Other differences in risks for these groups aid in treatment when they are differentiated according to gestational age and weight. (No refs.) - *B. Bradley*.

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754 MURDOCK, A.; SUTTON, M.; LINSAO, L.; TILAK, K.; REID, M.; LLEWELLYN, M. A.; & *SWYER, P. R. Operational experience of a large urban neonatal referral unit. *Canadian Medical Association Journal*, 101(6):351-353, 1969.

Over a one-year period there were 545 admissions to the intensive care unit of the neonatal division of the Montreal Hospital for Sick Children and 192 of these (35%) died. Fifty-one percent of the admissions weighed <2,500 grams. The respiratory distress syndrome accounted for most of the pulmonary disease which made up 45% of the admissions. Forty infants showed signs of asphyxial damage to the central nervous system. Among the 9 infants with multiple congenital anomalies and the 4 with chromosomal abnormalities, there were 8 deaths. Despite an increased number of admissions of more high-risk and low birth-weight infants, there has been no increase in the overall neonatal death rate. (2 refs.) - *E. L. Rowan*.

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755 FLEURY, P. Organizing screening programme for inborn metabolic errors in The Netherlands. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism*. (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Hohn, 1968, p. 60-66.

Since an inborn metabolic error usually starts exerting its negative influence on the CNS immediately after birth and without being evident at neurological examination, the error must be diagnosed as soon after birth as possible; therefore, neonates must be screened for the presence either of abnormal metabolites or abnormally large quantities of

physiological substances in the blood or urine. In organizing a screening program for the Netherlands, factors which were considered included: only 40% of the births take place in hospitals; only 28% of the neonates are seen at infant welfare centers within their first month of life with only an additional 26% presented during their second month of life; many parents are reluctant to submit their infant to the heel puncture technique, and many change the infant's diaper immediately before taking the child for the physical examination; and Dutch general practitioners are highly autonomous. With these facts in mind, a 3-level detection apparatus was planned for early diagnosis--the organization of those (general practitioners or district nurses) who will obtain the blood samples and apply strips to the urine-soaked diapers, the establishment of a central district laboratory to screen the samples, and the development of academic centers to advise regarding therapy and to conduct studies of unusual disorders. Late diagnosis calls for registration of patients known to suffer from a given metabolic disorder so that a family search can be made for genetically determined cases. (No refs.) - *K. Lee.*

756 PRECHTL, H. F. R. Neurological examination of the young infant. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism.* (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 77-90.

Techniques for the neurological examination of young infants are designed to detect brain dysfunctions in neonates who suffered from obstetrical complications and metabolic disorders. The examination procedures, which must be standardized, include determining the behavioral state of the infant, controlling the environmental conditions during examination, stimulating and handling of the patient in a prescribed manner, and recording the data. In order to come to some conclusive neurologic diagnosis, the examiner must re-evaluate the results in the light of their functional relationship to other systems. Abnormal neurologic signs often appear in particular combinations and thus form specific syndromes (the hemisyndrome, the apathy syndrome, the hyperexcitability syndrome, abnormalities of tonus and motility, and focal signs). In general, the anatomical localization of intracranial lesions is more appropriately performed by other methods, such as air studies, and EEG, than by the ordinary neurological examination. (12 refs.)
A. J. del Rosario.

757 CRICHTON, JOHN U.; & MACKOFF, HARLEY P. A clinical approach to the measurement of cerebral dysfunction. *Pediatrics*, 44(3): 365-374, 1969.

Electro-oculography has proven to be an objective clinical measure of cerebral dysfunction. Groups of normal children, children with "minimal brain dysfunction," and children with frank neurological and developmental disorders were asked to fixate on an object (red square) and not be distracted by a moving light elsewhere in their visual field. Normal children were able to fix for a significantly ($p=.005$) longer time than were the other groups. Their initial period of fixation was longer and they were distracted less frequently than the damaged groups, but a wide range of responses makes these latter measures clinically impractical. Children are able to fix longer as they grow older and girls apparently mature faster than boys; however, this did not affect the overall results. Although it is impossible to separate ocular hyperkinesis, lack of attentiveness, distractibility, impulsiveness, and motor impersistence as causes for the observed effect, it nevertheless remains a useful, empirical point of differentiation. (26 refs.)
E. L. Rowan.

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758 DONALD, IAN. Sonar as a method of studying prenatal development. *Journal of Pediatrics*, 75(2):326-333, 1969.

Sonar (ultrasonic echo sounding) can provide clinical information of normal and abnormal development from the earliest weeks of pregnancy until delivery. As early as the fifth week of amenorrhea, the very early products of conception are usually detectable in the upper pole of the uterus. By the sixth week of amenorrhea, the appearance of a white ring is a definite sign of pregnancy before the urinary gonadotropin tests are positive. Many established pregnancies abort spontaneously with the subsequent appearance of bleeding from the uterus. Two signs (a poorly shaped, imcomplete ring that fails to grow and a blotchy mass of spreckles replacing the ring) are indications of increased risk of abortion. By the fourteenth week, the fetal head with a midline structure can be clearly observed, and from this point on, the head grows rapidly. The midline structure in the skull, presumably the line of the falx, becomes more apparent as the pregnancy advances. In the third trimester of pregnancy, the rate of

fetal head growth can be measured by the increase of the biparietal diameter. The average growth curve of biparietal diameter of 400 normal pregnancies is presented. Slower than the normal rate of growth may be associated with dysmaturity. Such knowledge may influence a decision to terminate pregnancy. There is increasing evidence that some of these babies can be delivered alive and their ultimate prognosis may be good. This information also helps the pediatricians to avoid or anticipate neonatal complications, such as hypoglycemia. (12 refs.) - *L. S. Ho.*

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759 KARELITZ, SAMUEL; & FISICHELLI, VINCENT R. Infants' vocalizations and their significance. *Clinical Proceedings of the Children's Hospital of the District of Columbia*, 25(11):345-361, 1969.

Analysis of infants' vocalizations indicates differences in normal versus abnormal infants. Observations show that inflection is usually found in the cry of normal infants but not in young MR infants. A normal infant of a few days will give a startle reaction with some breath holding to a stimulus such as a rubber band. This behavior does not occur in a brain-damaged (BD) child. Sobbing does not occur in severely brain-damaged babies. Comparison of tapes of normal versus BD Ss showed that BD infants had a "thin cry" similar to that produced by a small premature infant. Normal children have more rhythmic and a greater amount of crying. Comparison of 4 normal infants with 4 mongoloid infants showed "greater density and magnitude of the bursts of crying" for the normals. Normal infants need less painful stimulation to cry, and they have a lower pain threshold than do BD infants. BD infants do not cry as readily after painful stimulation as demonstrated by their longer latent periods after stimulation. Crying of a newborn baby seems to be related to the amount of anesthesia and analgesia given. Data showed a high correlation between the cry rating and total Apgar score. Evaluation of infants' crying may have diagnostic value for determining MR. (11 refs.) *B. Bradley.*

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760 Newborn's skull defect signals doctor. *Medical World News*, 10(5):32E, 1969.

A physician recommends that obstetricians and pediatricians should become more cognizant of the possible presence of a third fontanelle in newborns and reveals clinical evidence that these bony defects can lead to other congenital impairments. Early detection is necessary and more examinations should be given to infants displaying the third fontanelle so that additional congenital anomalies can be recognized. (No refs.) - *S. Half.*

761 CHEMKE, JUAN; & *ROBINSON, ARTHUR. The third fontanelle. *Journal of Pediatrics*, 75(4):617-622, 1969.

The frequency of a palpable third fontanelle (a bony defect situated along the sagittal suture) in 1,020 neonates was 6.3%, including 10% in premature infants as defined by birth weight and 5.8% in full-term infants. Large third fontanelles (diameter >13 mm) were found in 1.9% of the infants and small third fontanelles (diameter <13 mm) in 4.4%. The 19 infants with large defects included one case of multiple major congenital anomalies and 7 cases of several minor congenital anomalies, while the 45 neonates with small defects included 2 with major congenital malformations and 2 with minor congenital malformations. Among 42 control infants, no major congenital anomalies were found. There was no demonstrable relation between the presence of a palpable third fontanelle and intrauterine infection or teratogens. (19 refs.) - *M. G. Conant.*

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Denver, Colorado 80220

762 BRAY, PATRICK F.; SHIELDS, W. DONALD; WOLCOTT, GEORGE J.; & MADSEN, JACK A. Occipitofrontal head circumference--an accurate measure of intracranial volume. *Journal of Pediatrics*, 75(2):303-305, 1969.

Occipitofrontal head circumference measured in 58 patients correlated very closely with intracranial volume which was calculated by taking 4 internal X-ray diameters. The MacKinnon formula was used: {1/2(L x H x W) + 1/2(L x B x W)} X 0.51, where L = internal length or maximum internal anteroposterior diameter; H = height, measured from the external auditory meatuses to the farthest point on the inner table of the skull vault; B = distance from inside of the bregma to the

posterior cranial fossa and W = the internal breadth, taken at the widest part of the cranial cavity. The Spearman rank correlation coefficient r_s was 0.982. (5 refs.) *F. J. McNulty.*

University of Utah College of Medicine
Salt Lake City, Utah 84112

763 FORT, ARTHUR T. Placental function tests: A review of tests showing promise but not yet established. *Southern Medical Journal*, 62(9):1080-1084, 1969.

Several of the promising tests of the fetal-placental-maternal complex could be used serially to improve the appraisal of the fetal situation. Deviations from normal pattern of amniotic fluid volume, electrolytes, osmolality, and nitrogenous compounds (especially during the last trimester) are indicative of placental failure. Serial measurements of amniotic contents following amniocentesis have great potential for assessing fetal condition. A decline of maternal plasma diamine oxidase may indicate fetal failure. Maternal serum oxytocinase increases from the fourth to thirty-eighth week after which a 1,000-fold increase occurs. Failure of oxytocinase to increase during the last trimester may impend fetal death. The method is easy and has great promise in managing high risk pregnancies. A decrease of the heat-stable isomer of alkaline phosphatase after the thirty-fourth week of gestation is an ominous sign. Fetal heart response to maternal atropine or isoxsuprine is a potential measure of placental function. The transfer of drugs across the placenta depends on the area and thickness of the membrane and uteroplacental flow. Fetal complications (such as hemolytic disease, dysmaturia, and toxemia) delay the appearance of intra-amniotically administered phenosulfonphthalein in the maternal urine. An increase of the vaginal superficial cells earlier than the thirty-eighth week indicates damaged and distressed fetuses. The method is simple and harmless to mother and fetus. Low serum tocopherol (2.5 mg%) is indicative of fetal distress and placental failure. (20 refs.) - *L. S. Ho.*

University of Tennessee College of Medicine
Memphis, Tennessee 38103

764 MILUNSKY, AUBREY; & LITTLEFIELD, JOHN W. Diagnostic limitations of metachromasia. *New England Journal of Medicine*, 281 (20):1128-1129, 1969.

The diagnostic use of metachromasia for mucopolysaccharidoses and cystic fibrosis is discouraged, because it occurs in widely different diseases as well as in normal persons and its production involves many variables including length of time in culture, "health" of the cells, concentration and derivation of proteins in the culture medium, method of fixation, presence of sodium chloride, pH, and origin and freshness of the staining dye. The staining reaction is rather nonspecific. It can occur between cationic dyes and anionic cellular components, such as mucopolysaccharides, polypeptides, lipids, nucleic acids, and metaphosphates. Carrier heterozygotes and affected homozygotes can not be differentiated by this method. (5 refs.) - *L. S. Ho.*

No address

765 TAYSI, KUTAY; KISTENMACHER, MILDRED L.; PUNNETT, HOPE H.; & *MELLMAN, WILLIAM J. Limitations of metachromasia as a diagnostic aid in pediatrics. *New England Journal of Medicine*, 281(20):1108-1111, 1969.

Metachromasia of cultured skin fibroblasts was found not only in homozygotes and heterozygotes with mucopolysaccharidoses and cystic fibrosis but also in 27% of cultures from pediatric patients with a variety of diagnoses. This rate is much higher than that expected from the heterozygous states for diseases in which metachromasia has been described. The data suggested that either there are other genetic diseases which can also produce metachromasia in skin fibroblasts, or there are other still unknown causes for metachromasia of fibroblast culture. Metachromasia of fibroblasts has little diagnostic value but can be used as a screening procedure which should be followed by additional morphological and chemical studies. A total of 91 persons were examined: 9 were homozygotes or heterozygotes for the mucopolysaccharidoses, 8 for cystic fibrosis, and the remaining 74 constituted the control group. Cultures were scored as positive when more than 10% of the cells were stained. Positive cells from patients with the mucopolysaccharidoses and cystic fibrosis and those from the positive controls could not be differentiated. (13 refs.) - *L. S. Ho.*

*Children's Hospital of Philadelphia
Philadelphia, Pennsylvania 19146

766 MULVIHILL, JOHN J.; & SMITH, DAVID W. The genesis of dermatoglyphics. *Journal of Pediatrics*, 75(4):579-589, 1969.

Evidence is presented to support the hypothesis that dermatoglyphic patterns are a direct consequence of growth stresses exerted on the topography of the fetal hand during the thirteenth to nineteenth intrauterine weeks and, thus, are only indirectly caused by genetic variation. Evidence is from literature, primate studies, mathematics, embryological studies, and dermatoglyphic patterns on malformed hands. In addition, 25 Ss with congenital malformations of the upper limbs had each volar surface photographed and diagrammatically line drawn; these line drawings also suggest the principle that parallel ridges develop transversely to the plane of growth forces and that in the fetus this results in curvilinear patterns with the complexity reflecting the height and form of the fetal pads at the time of ridge development. (32 refs.) - *K. Jarka.*

University of Washington School of Medicine
Seattle, Washington 98105

767 POZNANSKI, ANDREW K.; PRATT, GEORGE B.; MANSON, GORDON; & WEISS, LESTER. Clinodactyly, camptodactyly, Kirner's deformity, and other crooked fingers. *Radiology*, 93(3): 573-582, 1969.

Curvature of the fingers is found often in association with Down's, de Lange's, Klinefelter's, Turner's, Prader-Willi, and trisomy syndromes and many other congenital diseases or syndromes. Clinodactyly (curvature of a finger in a mediolateral plane) and camptodactyly (permanent flexion of one or more fingers) can be used in the differential diagnosis of a number of these disorders. Isolated clinodactyly or camptodactyly usually cause no problem to the patient; often, in fact, the finger curvature is found accidentally after X-rays are made for some other reason. Once this finger abnormality is noted by the physician, he should do an extensive search for other more severe anomalies in the patient. (73 refs.) - *K. Jarka.*

University of Michigan
Ann Arbor, Michigan 48104

MEDICAL ASPECTS--PREVENTION AND ETIOLOGY (GENERAL)

768 DYBWAD, GUNNAR. The importance of prevention in mental retardation. *Mental Retardation/MR*, 7(2):3-10, 1969.

Since the possibility of prevention is present in every area of MR, prevention must be a primary concern whenever delivery of services is discussed. Prevention requires the coordination of preventive services (prenatal clinics), health services (diagnostic clinics) educational services, and vocational services as well as state, local, and national agencies and private MR professional organizations. An increasing emphasis on prevention by curing social and economic deprivation will require professional organizations to enter into temporary alliances with groups operating in these areas in order to see that the concerns of MR are represented in any programs developed. A significant step toward MR prevention was the initiation, in 1963, of a program for the establishment of MR research centers and university-affiliated MR training centers. (No refs.)
M. D. Nutt.

Brandeis University
Waltham, Massachusetts 02154

769 HELD, FRITZ. Vorbeugungsmoeglichkeiten zur Verhuetung geistiger (und koerperlicher) Behinderungen (Measures for the prevention of mental [and physical] disorders). *Lebenshilfe*, 5(4):174-180, 1966.

Many forms of inherited and acquired (through brain damage) MR can be prevented or treated through proper tests before and after birth. Measures to be taken during pregnancy to prevent intrauterine damage include: blood-group and Rh-factor determination; blood analysis for syphilis, toxoplasmosis, and listenosis; and the prevention of rubella, chickenpox, and mumps infections. Newborn infants should be: routinely tested for phenylketonuria and galactosemia; observed for symptoms of hydrocephalus, epilepsy, and encephalitis; and be given a chromosome test for numerical and structural anomalies. Statistics indicate a high enough incidence of these disorders to warrant immediate introduction of pre- and post-natal testing; both types of testing should be covered by federal health insurance. (No refs.)
S. P. Glinsky, Jr.

Niedersaechsischen Landeskrankenhaus
Koenigslutter am Elm, West Germany

770 LOWE, CHARLES U. Modification of human metabolism: A challenge and an opportunity. *American Journal of Diseases of Children*, 118(6):817-822, discussion, 822-823, 1969.

Pediatric research projected into the next 3 decades can be expected to be designed to modify metabolic processes by limitation of substrate, supplementation of product, supplementation of coenzyme, and/or replacement of gene product. Substrate limitation includes current research efforts in phenylketonuria, branch-chain aminoaciduria, and galactosemia. The treatment of orotic aciduria by the addition of uridine to the diet to modify the metabolic defect is an example of product supplementation. Dietary supplementation with large amounts of coenzyme circumvents the structural defect in the enzyme and should improve the patient's condition. Gene product replacement includes the treatment of immunologic incompetence by the administration of specific immunologically active compounds and the administration of insulin to an individual lacking pancreatic islet-cell function. Within the next decade, more attention will be paid to the metabolic treatment of the mother to modify fetal development and there will be fabrication of synthetic enzymes. The basic knowledge and mechanical skill needed to construct an artificial uterus now exists. The development of such a device raises the possibility of dealing effectively with congenital metabolic aberrations and premature birth. (No refs.) *F. J. McNulty.*

National Institute of Child Health and Human Development
Bethesda, Maryland 20014

771 SMITH, DAVID W. *Recognizable Patterns of Human Malformation: Genetic, Embryologic, and Clinical Aspects.* (Volume 7: Major Problems in Clinical Pediatrics Series). Philadelphia, Pennsylvania, W. B. Saunders, 1970, 368 p. $16.00.

Because a malformation represents an inborn error of morphogenesis, the study of such malformations can be expected to elucidate the normal process of development in embryo and fetus. A single defect in morphogenesis can, if it occurs early enough, upset the subsequent development of other structures and result in a syndrome which appears to have been caused by multiple defects. Such syndromes as cleft lip and palate (primary defect in closure of lip); meningomyelocele and anencephaly (primary defect in neural tube closure); and sirenomelia (primary defect in mid-posterior axis mesoderm) are examples of this type of malformation. There are at least 135 syndromes known in which multiple primary defects occur. Among these are most of the chromosomal anomalies syndromes, the dwarfisms, and some with neurological manifestations. Accurate diagnosis of a specific syndrome is prerequisite to treatment, prognosis, and genetic counseling. This book should be of interest to embryologists, physicians, and pediatricians. Included are several appendices which should aid the diagnosis of specific syndromes, and in addition, the front and back covers of this book has developmental stages in chart form for easy reference. (517 refs.) *K. Jarka.*

CONTENTS: Single Syndromic Malformations Resulting in Secondary Defects; Dysmorphic Syndromes of Multiple Primary Defects; Morphogenesis; Genetics and Genetic Counseling Relative to Single Primary Defects and Dysmorphic Syndromes of Multiple Primary Defect; Minor Malformations as Clues to More Serious Problems and Toward the Recognition of Malformation Syndromes; Appendices.

772 BLYTH, HELEN; & CARTER, CEDRIC. *A Guide to Genetic Prognosis in Paediatrics.* Supplement No. 18 to *Developmental Medicine and Child Neurology.* London, England, William Heinemann Medical Books, 1969, 37 p. $1.50.

Genetic prognosis is an important facet of any pediatrician's responsibility to a family with an ill child. This booklet is designed as a handy and easily scanned guide for those diseases which have a significant recurrence rate in siblings. It is intended to aid physicians in recognition of those cases which should be referred to a genetic clinic. The diseases (and synonyms) are listed alphabetically under each organ system, and the mode of inheritance and recurrence risks are detailed. In addition, one section gives a straightforward alphabetical listing of syndromes (including which organ systems and which genetic modes are involved). This booklet should be of interest to physicians, pediatricians, and others interested in genetics of diseases or in genetic counseling. (8 refs.) - *K. Jarka.*

CONTENTS: Alimentary System; Blood and Hemopoietic System; Cardiovascular and Lymphatic System; Endocrine System; Metabolism; Mental Subnormality; Muscular System; Nervous System; Respiratory System; Skeletal System; Skin, Hair and Nails; Teeth; Special Senses; Urogenital System; Syndromes.

773 CARTER, C. O. The frequency of conditions due to mutant genes of large effect. *Lancet*, 1(7607):1203-1206, 1969.

The frequency of conditons determined by mutant genes depends essentially on the balance between the input of such genes into the population as a result of fresh mutation and their removal by selection. An increase in the mutation rate will cause a rapid rise in the frequency of dominant conditions of low fitness, a very slow rise in recessive conditions, and an intermediate rate of increase with X-linked conditions. When the frequency of a recessive condition depends on heterozygote advantage (as in sickle cell anemia), the effect of greatly increasing the mutation rate will be small. Gene mutations may be increased by ionizing radiation, certain chemicals, and ultraviolet light; however, diagnostic radiology causes the only significant increase in man. (16 refs.)
M. G. Conant.

No address

774 MACKLER, BRUCE. Studies of the molecular basis of congenital malformations. *Pediatrics*, 43(6):915-926, 1969.

Rats were fed either a regular commercial diet, a riboflavin-deficient diet containing 60 mg galactoflavin/kg, a riboflavin-deficient diet containing 16 mg riboflavin/kg, or a riboflavin-deficient diet containing 60 mg galactoflavin and 600 mg riboflavin/kg throughout pregnancy and embryos of 10-20 days gestation were examined; gross malformations including skeletal anomalies such as micrognathia and hypoplasia of the bones of the extremities were observed in 95% of the treated fetuses. The treated fetuses were also smaller by day 12 or 13 of the gestation than control fetuses. The activity and composition of the electron transport system in the treated and control fetuses were studied by fractionating a partially purified electron transport particle from pooled fetuses of various gestation lengths. The specific activity of the terminal electron transport systems of tissues from animals receiving a riboflavin-deficient diet augmented with galactoflavin was markedly reduced from that of control animals, although the protein levels were not reduced. This suggests that normal amounts of enzyme protein were being produced. The decreased specific activity was found on days 12 to 16, the period of gestation which is critical for the development of congenital malformations. (16 refs.)
M. G. Conant.

University of Washington
Seattle, Washington 98105

775 STEWART, ANN L.; KEAY, A. J.; & SMITH, P. G. Congenital malformations: A detailed study of 2,500 liveborn infants. *Annals of Human Genetics*, 32(4):353-360, 1969.

The 2,500 consecutive, liveborn infants born between August 1965 and June 1967 in Western General Hospital, Edinburgh (Scotland) were examined in detail for the presence of congenital physical abnormalities. Strict adherence to predetermined diagnostic criteria was maintained. In addition to the study population of 2,500 infants, there were 50 stillbirths during the survey period, and 43 of the liveborn infants died in hospital within one month of birth. The incidence of malformations was 7.4% (184 infants). This incidence is higher than those reported by others (probably due to differences in method and size). Factors considered likely to influence the incidence of congenital malformations (birth-weight, maternal age and parity, and length of gestation) were found to have no significant effect. Detailed examination of the infants may have revealed malformations that otherwise would have become apparent only at a later date, although the possibility that the malformation rate in south-east Scotland is unusually high cannot be ruled out. (12 refs.) - *M. G. Conant.*

Wolfson House, Euston Buildings
London, N. W. 1, England

776 SCHMIDT, ROSEMARY E.; & FRANK, DONALD J. Neonatal mortality in a private hospital: A four year study with some suggestions for prevention. *Ohio State Medical Journal*, 65(12):1226-1228, 1969.

A 4-year study of 20,435 liveborn infants weighing over 1,000 gm in a private hospital showed 183 deaths (mortality rate of 8.95/1,000 live births). The most common causes of death were the respiratory distress syndrome (31.9%) and severe congenital abnormalities (27.9%). Of infants between 1,000-2,000 gm, 1/2 of the deaths were due to the respiratory distress syndrome (RDS), and hyaline membrane disease (HMD) was present at autopsy

in most of these cases. Only 7 cases of HMD were found in infants weighing 2,000 gm or more. About 1/2 of the deaths in these infants were due to congenital abnormalities. Of the 47 infants with RDS autopsied, 29 showed significant intracranial hemorrhage. Rapid correction of acidosis was thought to have deleterious effects on the central nervous system. Over 96% of the obstetrical patients were white, middle-class suburbanites; therefore, socio-economic problems and environmental deprivation were of minimal importance in these pregnancies. (3 refs.) *L. S. Ho.*

Good Samaritan Hospital
Cincinnati, Ohio

777 RENNARD, MARVIN. Perinatal mortality: A review of 450 consecutive perinatal deaths. *American Journal of Obstetrics and Gynecology,* 104(5):727-737, 1969.

The perinatal mortality rate in perinatal period I (defined as all infants weighing over 1,000 gm at birth including stillbirths and liveborn infants who die within 7 days after birth) in the Jewish Hospital of St. Louis during 1958 to 1968 was 18.8/1,000 live births. The rate was higher among Negro (28.6/1,000) than among white women (16.9/1,000). Three major categories of perinatal death comprising 51% of all deaths were abnormal pulmonary function, congenital malformations, and "no demonstrable cause". Based on current knowledge, 11.3% of the deaths were preventable. The high perinatal mortality rate found in Negroes cannot be entirely due to poor prenatal care. Each perinatal death in this study was carefully and individually assessed for the significance of prenatal care, and only 2 of 237 white and one of 113 Negro perinatal deaths could be attributed to a lack of prenatal care. Other determinants, perhaps nonmedical, are involved. (29 refs.) - *L. S. Ho.*

Jewish Hospital of St. Louis
St. Louis, Missouri

778 ASHFORD, J. R.; FRYER, J. G.; & BRIMBLECOMBE, F. S. W. Secular trends in late fetal deaths, neonatal mortality, and birth weight in England and Wales, 1956-65. *British Journal of Preventive & Social Medicine,* 23(3):154-162, 1969.

The perinatal and neonatal mortality in England and Wales during 1956-65 decreased, and those areas with the greater proportions of low birth-weight infants had the higher perinatal mortality. Factors which increase the risk of perinatal death include low birth-weight, low socioeconomic status, short stature, advanced parity, and advanced age of mother. The changes in birth-weight distribution were not uniform in time nor in different parts of the country. There was a rise in the proportion of low birth-weights between 1956-57 and between 1960-61. The fall between 1963-64 was twice that of any other year. The reductions in perinatal mortality were usually larger in the rural areas than in urban areas. For infants less than 2,501 gm birth-weight, late fetal deaths were reduced from 22.6/1,000 total births in 1956 to 15.7/1,000 in 1965, and deaths between 24 hours and 28 days were reduced from 65.6/1,000 in 1956 to 43/1,000 in 1965. The late fetal death rate has steadily fallen year by year, and the improvement in the mortality rate between 24 hours and 28 days has also been smooth. The mortality within 24 hours in low birth-weight groups has shown little change. (9 refs.) - *F. J. McNulty.*

University of Exeter
Exeter, England

779 KALLEN, BENGT; & WINBERG, JAN. Multiple malformations studied with a national register of malformations. *Pediatrics,* 44(3):410-417, 1969.

Constellations of malformations have been determined from the Swedish national register of malformed children. The register was compiled over a 3-year-period and recorded 241,000 births and 2,506 malformed children of whom 120 showed multiple (3 or more) malformations. Statistical analysis showed that 15 of these children demonstrated a greater-than-chance association of closure defects of the central nervous system, anophthalmia or microphthalmia, cleft lip and/or cleft palate, and reduction malformations of the limbs. These births clustered during the first half of 1965; this suggests that a teratogenic agent may have been active prior to this, although the specific etiology of the syndrome is as yet undetermined. (1 ref.) *E. L. Rowan.*

University of Lund
Lund, Sweden

780 CHAMBERLAIN, GEOFFREY. *The Safety of the Unborn Child.* Baltimore, Maryland, Penguin Books, 1969, 183 p. $1.65.

Embryonic development, intrauterine hazards, and the etiology of congenital anomalies concern every expectant mother. In Britain, 20 live babies in every thousand are born with an abnormality. Retrospective and prospective studies and animal experimentation are the usual methods used to trace the cause of such abnormalities. Congenital malformations have genetic, environmental, or teratological causes. If a chromosome mutation occurs in a cell which forms an essential keystone in a vital system of the body and if this takes place at a crucial stage in fetal development, a malformation can follow. Environmental factors in abnormal fetal development include disease of the mother, irradiation, diet, and maternal age. Large doses of radiation may upset molecular arrangements and enzyme systems or may alter the development of bone marrow. Deficiencies of certain vitamins can produce malformations in the fetus. Maternal rubella during the first 12 weeks of pregnancy may cause complications such as deafness or heart disease. Diabetic mothers have a slightly higher rate of malformed children. Urinary diseases, tuberculosis, heart disease, and cancer usually do not affect fetal growth. In later maternal life, there are more abnormal gene mutations; this may cause more abnormalities in children of older mothers. Tetracycline, streptomycin, cortisone, progesterone, thalidomide, aminopterin, and anti-vomiting drugs can produce congenital abnormalities, and nicotine, insulin, and aspirin should be more closely investigated. The most serious intrauterine hazards to the fetus are asphyxia, the rhesus problem, prematurity, and diseases of the mother. (No refs.) - *V. G. Votano.*

CONTENTS: Antenatal Care; The Development of the Embryo; Knowledge of the Infant before Birth; The Extent of the Problem; Searching for Causes; Genetic Causes; Environmental Causes; Drug-affected Babies; The Prevention of Congenital Malformations; Asphyxia; The Rhesus Problem; Prematurity; Disease of the Mother.

781 SHAPIRO, SAM; & ABRAMOWICZ, MARK. Pregnancy outcome correlates identified through medical record-based information. *American Journal of Public Health,* 59(9): 1629-1650, 1969.

Medical record data on 12,000 women enrolled in the Health Insurance Plan (HIP) in New York were used to assess maternal condition and pregnancy outcome. Fourteen percent of the women was Negro; 2% was Puerto Rican, and the number of very young mothers (under 20 yrs of age) was extremely small. Approximately 15% of the pregnancies in the HIP group ended in fetal death. Women who had histories of premature births or fetal deaths were about twice as likely to have adverse terminations of their pregnancies as those women who had had mature live births in previous pregnancies. The interval between pregnancies was found not to be as important as a history of prior fetal loss or premature birth; however, there was some curvilinear relation between loss-disability and interval between pregnancies with short and long intervals having the highest rate. Data on total fetal deaths, low birth-weight, and congenital anomalies showed that 25% of all pregnancies in this group ended unfavorably. Gravidity and age of mother seemed to be related to early fetal loss; loss-disability was relatively high when staining or bleeding had occurred in an early pregnancy, but no increase in risk was found among women with toxemia in prior pregnancies. (24 refs.) *B. Bradley.*

Health Insurance Plan of Greater New York
New York, New York 10022

782 BUCK, CAROL; GREGG, ROSE; STRAVRAKY, KATHLEEN; SUBRAHMANIAM, KATHLEEN; & BROWN, JOSEPHINE. The effect of single prenatal and natal complications upon the development of children of mature birthweight. *Pediatrics,* 43(6):942-955, 1969.

A group of 377 children of mature birth-weight was followed prospectively to the end of their first year in school (CA 5 yrs 4 mos) to determine the effect upon their development of complications in one of the following areas: pregnancy (toxemia, hemorrhage); labor (difficult labor, cord complication); or obstetrical anesthesia (general anesthesia or premedication). Exclusions were made for medical reasons (previous fetal loss, birthweight below 5.5 lbs, multiple births, and cesarean section) and for social reasons (single, divorced, separated, widowed mother, or non-English speaking mother). Stratified random samples were drawn from each group, balanced proportionately for maternal age, birth order, and season of birth, and compared to a control group by a discriminant function analysis with covariance adjustments for the background variables. Only in the

comparison between children exposed to pre-eclamptic toxemia and their controls was a difference in intelligence and behavior shown with the toxemic group achieving lower scores; and this difference was small and of borderline significance. (31 refs.) - *M. G. Conant.*

University of Western Ontario
London, Ontario, Canada

783 USHER, ROBERT; & McLEAN, FRANCES. Intrauterine growth of live-born Caucasian infants at sea level: Standards obtained from measurements in 7 dimensions of infants born between 25 and 44 weeks of gestation. *Journal of Pediatrics*, 74(6):901-910, 1969.

Body proportions were measured in 7 dimensions (crown-heel and foot length; head, chest, abdominal, and thigh circumference; and double skin thickness) by a single observer on 300 newborn Caucasian infants delivered at an altitude of 100 feet above sea level. Gestational ages ranged from 25 to 44 weeks. Normal smooth curves were drawn of the mean ± 2 standard deviations for birth-weight, crown-heel length, head circumference, and chest circumference against gestational age. Similar curves were found for head circumference, head-chest circumference difference, and crown-heel length against birth-weight, and for head circumference against crown-heel length. (9 refs.) - *M. G. Conant.*

Royal Victoria Hospital
Montreal, Quebec, Canada

784 AUBRY, RICHARD H.; & NESBITT, ROBERT E. L., JR. High-risk obstetrics: I. Perinatal outcome in relation to obstetrical care for patients at special risk. *American Journal of Obstetrics and Gynecology*, 105(2):241-247, 1969.

In order to test the hypothesis that special care of the high-risk obstetrical patient will reduce the perinatal mortality rate, a special program of comprehensive team management was instituted, and early results showed improved salvage of infants. Patients were referred to the program because of poor prior pregnancy history or significant medical illness. A rating system was devised to identify at-risk patients, and this proved useful not only in defining that broad group but also a smaller, more at-risk group which required the most intensive care. The team consisted of the full range of medical specialists and paramedical personnel. In addition, a broad laboratory screening program was routinely employed and uncovered significant, previously undiagnosed illnesses in nearly 30% of the patients. Patients were managed on either an in-patient or out-patient basis. The results of the pregnancies were compared with the prior pregnancies of the groups and showed a significant improvement for low birth-weight (23% previously vs 17% currently), neonatal deaths (132 deaths/1,000 live births previously vs 44 deaths/1,000 currently), and perinatal deaths (210 deaths/1,000 live births previously vs 66 deaths currently). Such results raise hopes that similar efforts with all at-risk obstetrical patients can significantly improve fetal salvage. (10 refs.) - *W. Klein.*

750 Adams Street
Syracuse, New York 13210

785 FLIEGNER, J. H.; RENOU, PETER; WOOD, CARL; BEISCHER, N. A.; & BROWN, J. B. Correlations between urinary estriol excretion and fetal acidosis in high-risk pregnancies. *American Journal of Obstetrics and Gynecology*, 105(2):252-256, 1969.

The estriol excretion and the fetal blood pH in 80 high-risk pregnancies were correlated with the clinical outcome and gave indications that these 2 tests could be used jointly to improve management of such pregnancies. The patients selected had a variety of obstetrical complications which placed them in the high-risk groups. Low estriol levels were found in 30% of these patients, and of these, 41% (10 fetuses) was found to have fetal acidosis (blood pH less than 7.20). Of these 10 fetuses, 5 had low Apgar scores (0-3) at birth. Of the 56 patients with normal estriol levels, only 4 had fetal acidosis (3 of the 4 fetuses also had low Apgar scores at birth). Of the 52 patients with normal estriol levels and normal fetal pH, 2 had low infant Apgar scores, probably due to complications immediately preceding birth. Estriol excretion levels probably can be used to select patients for fetal pH studies, and both tests can be used to manage the high-risk pregnancy. (13 refs.) *W. Klein.*

University of Melbourne
Melbourne, Victoria, Australia

786 NELSON, GEORGE H. Patterns of maternal urinary estriol excretion in stillbirths and neonatal deaths. *Southern Medical Journal*, 62(9):1085-1089, 1969.

Low urinary estriol excretion was found in 10 of 14 pregnancies which ultimately ended in stillbirth or neonatal death. Each woman had at least 2 estriol determinations while the fetus was known to be alive. In 10 cases, the estriol was low at the time of death of the fetus, and in 6 of these, the level had been persistently low. In 3 cases, the estriol level was normal at the time of death, but in 2 of these, the last determination was made 16 and 7 days, respectively, before death. In the third case, the estriol level was high at fetal death, and no explanation could be offered. One baby died in the neonatal period of a condition which could not have affected the estriol excretion pattern. (12 refs.) - *W. Klein.*

Medical College of Georgia
Augusta, Georgia

MEDICAL ASPECTS--ETIOLOGIC GROUPINGS

Infections, intoxication, and hemolytic disorders

787 MEYER, HARRY M., JR. The control of rubella and other virus infections in the prevention of mental retardation. *Mental Retardation/MR*, 7(2):17-18, 1969.

Viral infections are often related to central nervous system disorders; syphilis, rubella, toxoplasmosis, and cytomegalovirus, all can cause CNS disease. In addition, measles has been linked to subacute sclerosing panencephalitis, mumps to hydrocephalus, and Down's syndrome shows certain clustering effects and a higher incidence in urban areas--both suggestive of an infectious etiology. Viral-caused chromosomal damage appears a likely agent in cancer etiology. Efforts to control viral diseases involve the development of vaccines to provoke immunity. The basic steps in the development of a viral vaccine include recognition of the disease as a serious problem, isolation of the virus, and growth of the virus under laboratory conditions suitable for vaccine production. In addition, after these 3 conditions are met, the vaccine must be delivered to the target population--sometimes a problem in itself. (No refs.) - *F. J. McNulty.*

National Institutes of Health
Bethesda, Maryland 20014

788 HILLEMAN, M. R. Toward prophylaxis of prenatal infection by viruses. *Obstetrics and Gynecology*, 33(4):461-469, 1969.

The 3 systemic myxovirus infections of childhood, rubeola (measles), mumps, and rubella are now controllable because of the development within the past decade of safe and effective vaccines. The eradication of all 3 diseases is now a possibility, and, with their eradication, the prevention of a significant number of cases of MR. At least 5% of all pregnancies are complicated by at least one viral infection, and rubella is especially devastating to the fetus. Measles was the first of the 3 diseases to be controlled by a vaccine--Enders' Edmonston strain vaccine. A new vaccine, Moraten (more attenuated Enders'), has been administered to 28,000 Ss, more than 1/2 of whom were susceptible, with no adverse effects. Mumps was controlled shortly after measles with the Jeryl Lynn vaccine. Of 402 Ss vaccinated with Jeryl Lynn, 395 (98.2%) developed mumps antibody. No adverse clinical reactions have been reported with this vaccine. Rubella, the last of the 3 against which an effective vaccine was developed, is expected to be brought under control very soon. Combinations of all 3 vaccines in one

dose appears to be feasible and should give protection against all 3 viruses with only one patient visit. The eventual elimination of these diseases from the entire world now appears possible. (34 refs.) - *R. K. Butler.*

Merck Institute for Therapeutic Research
West Point, Pennsylvania 19486

789 BIRNBAUM, GARY; LYNCH, JOHN I., MARGILETH, A. M.; LONERGAN, W. M.; & SEVER, JOHN L. Cytomegalovirus infections in newborn infants. *Journal of Pediatrics*, 74(5):789-795, 1969.

Of 545 newborns tested, cytomegalovirus was found in the urine of 3 (2 girls and one boy). Although none had classical cytomegalic inclusion disease, all 3 infants had "transient abnormalities" during their first year. At present, 2 of the 3 children are considered normal, while the third is slightly spastic. There were no observed abnormal liver functions in infants or mothers, but 2 of 3 had hepatomegaly in the newborn period. All 3 babies had elevated IgM levels throughout their early months. Although there was no neutralizing antibody in 2 of the cord sera, all 3 later had antibody. The complement-fixing antibody levels varied. Virus excretion persisted in the children during observation periods. Although familial infections occurred, there was no sign of the disease. Congenital infection with cytomegalovirus apparently does not always result in classical cytomegalic inclusion disease. (23 refs.) *B. Bradley.*

National Institues of Health
Bethesda, Maryland 20014

790 SOMOZA, MANUEL J.; MONTEVERDE, DAVID A.; MORGENFELD, MARCOS C.; & HIRT, JUAN. Anisocoria in active toxoplasmosis. *Lancet*, 1(7597):735, 1969. (Letter).

Of 43 Ss examined because of cervical adenitis which was caused by *Toxoplasma gondii*, 16 (37%) were found to have anisocoria. (No refs.) - *A. Huffer.*

J. M. Ramos Mejia Hospital
Buenos Aires, Argentina

791 HUDSON, ALBERT W.; & McFARLAND, CLARENCE. Disseminated Herpes simplex in a newborn. A consequence of infection in the mother. *Journal of the American Medical Association*, 208(5):859-861, 1969.

A 9-day old, male infant readmitted to the hospital because of failure to eat, 12 hours of vomiting, and a palatal ulcer was found to have disseminated *Herpes simplex* infection. The infant died on the seventh day of meningoencephalitis. Cytopathological effects typical of herpesvirus were noted in antemortem specimens of cerebrospinal fluid (CSF) and postmortem tissue specimens from the infant and inocula from the cervix and vagina of the mother. As the incubation period for *Herpes simplex* is 4 to 12 days, it is probable that this infant acquired an herpetic infection *via* a subclinically infected birth canal. Oral and pulmonary lesions in the infant suggest that the route of infection was by aspiration of infected vaginal material and subsequent involvement of the central nervous system. Pregnant women who have a history of prior genital herpes should be screened, and cesarean section should be considered if virus is present near the time of delivery. (16 refs.) *L. E. Bayliss.*

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Rochester, Minnesota 55901

792 WILT, J. C.; HENDRY, J.; & STACKIW, W. Herpes simplex encephalitis. *Canadian Medical Association Journal*, 101(7):82-84, 1969.

Clinical, autopsy examination, and virological findings in a 29-year-old man with encephalitis led to the diagnosis of *Herpes simplex* encephalitis after the death of the patient. Symptoms of *Herpes simplex* encephalitis are often sufficiently characteristic to permit a clinical diagnosis; however, in acute, severe, cases, the 10-12 days required for confirmation by antibody testing is often too long. Brain biopsy, a controversial process, might provide an earlier specific diagnosis and exclude the possibility of brain abscess or tumor. The reason that this patient developed a fatal encephalitis from a usually mild virus is not known. Possible bases for the development of a herpetic encephalitis in an adult might be a change in the state of virulence of the organism at the time of exposure, a poor state of immunity of the host at the time of exposure, or a variation in some other aspect of the virus-host cell relationship. All of these factors vary greatly from person to person. In this

case it seems likely that the disease began with the introduction of an exogenous neurovirulent strain of *Herpes simplex* virus into a susceptible adult. The virus then spread to the brain without producing an apparent superficial lesion. The severity of the disease was characteristic of *Herpes* encephalitis in an adult. (20 refs.) - *B. Parker.*

University of Manitoba
Winnipeg 3, Manitoba, Canada

793 GALLOWAY, W. H. Mumps meningo-encephalitis. *Developmental Medicine and Child Neurology*, 11(4):518-519, 1969. (Annotation)

When parotitis is present, there is no difficulty in diagnosing mumps meningo-encephalitis; however, if it is not present, additional studies are needed. There is no effective treatment, and the majority of persons recover. The prime goal is to exclude other types of meningo-encephalitis for which there is adequate therapy. Neither the severity of the complications nor the clinical features of mumps warrant widespread use of the available vaccine. (7 refs.) *S. Half.*

University of Aberdeen
Foresterhill, Aberdeen AB9 22D, Scotland

794 DEINHARDT, FRIEDRICH; & SHRAMEK, GRACE J. Immunization against mumps. *Progress in Medical Virology*, 11:126-153, 1969.

Two approaches are followed currently to confer immunity to mumps: vaccination with inactivated mumps viruses and vaccination with live, attenuated mumps viruses. Inoculation of mumps hyperimmune γ-globulin neither prevents the infection nor reduces the incidence or severity of complications regularly enough to be of clinical or public health value . Both the inactivated and the live, attenuated mumps viruses are safe and protect almost 100% of the inoculated individuals; however, the immunity conferred by the inactivated viruses is temporary, whereas that provided by the live, attenuated viruses is long lasting. Recent studies with the Jones strain of mumps viruses showed that the immunity following inoculation of mumps viruses which have been grown for 17 to 21 passages in avian cells induces antibody patterns very similar to those observed after the natural disease. CF-V and CF-S as well as N antibodies develop in susceptible adults and children after one subcutaneous dose in the same manner that they develop in acute and convalescent serums of mumps patients. Complications due to mumps virus infections occur more frequently than previously realized and may occur with or without the development of clinical parotitis. Aseptic meningitis and orchitis are the most frequently occurring nonparotid manifestations of mumps infections, but almost any other organ may be affected and permanent damage may result. The protection of older children and adults from the possible complications of mumps is a good public health practice. (93 refs.) *G. Pura.*

University of Illinois
Chicago, Illinois 60680

795 MORLEY, DAVID. Severe measles in the tropics. - I. *British Medical Journal*, 1(5639):297-300, 1969.

Measles is a particularly severe disease in underdeveloped tropical countries where it is closely associated with malnutrition. Studies in West Africa have shown a mortality rate of approximately 15%. Infants are commonly affected, and the disease is manifest as a particularly dark skin rash, mouth lesions, bronchopneumonia, diarrhea, and seizures (4%). Poor premorbid nutritional status is complicated by a decreased willingness to eat with a sore mouth and the fluid loss inherent in diarrhea. Native folklore that the disease is likely to be fatal and children should be hidden away, and a tendency to withhold fluids in illness only serve to make the problem worse. (No refs.) *E. L. Rowan.*

Institute of Child Health
London, England

796 MORLEY, DAVID. Severe measles in the tropics. - II. *British Medical Journal*, 1(5640):363-365, 1969.

The management of severe measles in poorly nourished children in underdeveloped countries is dependent upon encouraging parents to bring their children to the hospital so that a satisfactory intake of food and fluid may be maintained. More important, however, is the institution of a preventive program of measles vaccination. Live, attenuated vaccines are preferred as reactions will

likely go unnoticed and protection is prolonged. A program of measles eradication can be successful, but only in the context of health care services freely available to all children. (55 refs.) - *E. L. Rowan.*

Institute of Child Health
London, England

797 KRUGMAN, SAUL; CONSTANTINIDIS, PETER; MEDOVY, HARRY; & GILES, JOAN P. Comparison of two further attenuated live measles-virus vaccines. *American Journal of Diseases of Children,* 117(2):137-138, 1969.

When the Moraten and the Schwarz strains of live, attenuated measles-virus vaccine were compared in institutionalized and home-dwelling MR children, the strains showed similar clinical evidence of attenuation and were highly immunogenic. Blood, collected before and one month after vaccination, was tested for measles hemagglutination-inhibition antibody. For 14 days after vaccination, daily rectal temperatures were taken. In institutionalized MRs from Winnipeg, Canada (28 vaccinated with the Moraten strain, 22 vaccinated with the Schwarz strain, and 50 controls), the antibody response was 100% for both strains, while high fever (103-105°F) occurred in only 2 Ss with the Moraten strain. In home-dwelling MRs from Winnipeg, the antibody response was present in 26 of 27 vaccinated with the Moraten strain and 20 of 22 vaccinated with the Schwarz strain; high fever occurred in 3 Ss in each group. In the institutionalized MRs from Willowbrook State School (New York), 6 of 33 who received the Moraten strain and 2 of 9 who received the Schwarz strain had high fever, and all 42 had an antibody response. (3 refs.) - *A. Huffer.*

New York University Medical Center
New York, New York 10016

798 NORRBY, ERLING; LAGERCRANTZ, RUTGER; & GARD, SVEN. Measles vaccination. VII. Follow-up studies in children immunized with four doses of inactivated vaccine. *Acta Paediatrica Scandinavica,* 58(3):261-267, 1969.

Clinical and serological follow-up of children immunized with 4 doses of inactivated measles vaccine showed that the degree of immunization of children who received TE vaccine (purified hemagglutinin prepared from Tween 80 and ether-treated material) was less than that of children immunized with FK vaccine (formalin-killed whole virus). The stability of titers with time after boostering was also different between the 2 groups; reduction of hemagglutinin-inhibiting (HI) antibody titers 1 1/2 year after boostering was 13.3 and 3.4-fold in children who received a primary immunization with TE and FK vaccine, respectively. Most children were protected when exposed to cases of natural measles; however, subclinical or mild measles was found in several cases in spite of the presence of HI antibody. Three cases of pneumonia were encountered in those who received FK vaccine, whereas no pneumonia form of measles was seen in those immunized with TE vaccine. (11 refs.) - *L. S. Ho.*

Karolinska Institutet
105 21 Stockholm, Sweden

799 Rubella--A challenge for modern medical science. *Archives of Otolaryngology,* 88(1):1-2, 1968. (Editorial)

Children born to mothers who contract or are exposed to rubella during pregnancy may be born with the rubella syndrome which may include defects in sight, hearing, heart, bones, nerves, and blood. Although the risk to the fetus has not been calculated, abortion should be considered for women who have rubella in the first 3 months of pregnancy. Children born with rubella syndrome may carry and spread rubella virus for 2 1/2 years. If possible, girls should be exposed to rubella before their child-bearing years because it is estimated that 19% to 32% of the pregnant women in the United States have no rubella resistance. Giving γ-globulin during pregnancy does not appear to be effective in prevention of the rubella syndrome. (6 refs.) - *M. Plessinger.*

800 PLOTKIN, STANLEY A. How to recognize congenital rubella. *Clinical Pediatrics,* 8(7):403-404, 1969.

Congenital rubella can be recognized and diagnosed by investigation of the mother's medical history, the infant's height and weight, and by examination of the infant's eyes, heart, ears, liver and spleen size, blood cell count, bone X-rays, and the composition of the cerebrospinal fluid. Confirmation of clinical suspicion should be done by virus isolation from infant tissues. Immunoglobulin M and antibody determinations can also be useful to the attending physician. (3 refs.) *S. Half.*

University of Pennsylvania
Philadelphia, Pennsylvania 19104

801 SKINNER, WILLIAM E. Routine rubella antibody titer determinations in pregnancy. *Obstetrics and Gynecology*, 33(3):301-305, 1969.

Ten percent of 2,738 prenatal patients studied lacked antibodies for rubella as determined by the hemagglutination-inhibition (HI) test. One in every 10 patients with a rubella infection history was found to be susceptible to the infection. Eight in every 9 patients who were unaware of a prior rubella infection had circulating rubella antibodies. There was, therefore, little correlation between a patient's medical history and her actual immunity to rubella. (9 refs.) - *L. S. Ho.*

United States Army Hospital
West Point, New York 10996

802 BURROWS, STANLEY; & BOLLMAN, CHARLES. Rubella hemagglutination-inhibition test in an obstetric population. *Obstetrics and Gynecology*, 33(5):702-708, 1969.

Three hundred and ninety pregnant women were studied for the presence of rubella antibody by the use of a hemagglutination-inhibition (HI) test, and the blood specimens indicated rubella antibody was present in 89.7%. There was no difference in the incidence of antibody by race; however, there was a correlation between the occurrence of rubella antibody and a positive history of rubella infection in Negro patients. There was no correlation between the history and the antibody in white patients. About 27.8% of white patients without antibody had histories with no or uncertain information about rubella infection, whereas 9.1% of Negro patients with a similar history were without antibody. Both white and Negro patients showed increased rubella antibody with advancing age. Since most rubella infections are subclinical and since clinical histories are not always accurate, reliance must be placed on serological tests. The HI test is as sensitive as the neutralization test and is rapid and simple enough for large scale use. (21 refs.)
F. J. McNulty.

Cooper Hospital
Camden, New Jersey 08103

803 LEHMANN, NOREEN; FERRIS, A. A.; BENNETT, N. McK.; & NEWMAN, J. W. Rubella: Results of a serological survey of pregnant patients in Melbourne during 1968. *Medical Journal of Australia*, 1(24):1282-1283, 1969.

Of 1,177 pregnant patients tested in Melbourne (Australia) in 1968, 87.3% had hemagglutination-inhibition (HI) antibodies in their blood serum. Of the Ss between 15 and 19 years of age, 83.2% had HI antibodies, while after age 35 years, 95.6% had HI antibodies. HI-antibody titers varied from 1:4 to 1:32,000; however, 61.3% were in the range from 1:256 to 1:2,000. Since the percentage of Ss in each age group with lower titers increases progressively with age, these levels probably represent remote infections. All women of child-bearing age should be tested before pregnancy, and those who are susceptible to rubella should be immunized before becoming pregnant. (3 refs.)
A. J. del Rosario.

Queen Victoria Memorial Hospital
Melbourne, Australia

804 HARDY, JANET B.; McCRACKEN, GEORGE H., JR.; GILKESON, MARY RUTH; & SEVER, JOHN L. Adverse fetal outcome following maternal rubella after the first trimester of pregnancy. *Journal of the American Medical Association*, 207(13):2414-2420, 1969.

Data from 24 women who had rubella in the second trimester of pregnancy showed that only 7 of the surviving children were normal. Of 22 surviving infants, 15 were suspected of being abnormal and 10 of these have communication difficulties. Rubella antibody was not found in the normal infants after 6 months of age. Ten of the abnormal children had significant rubella antibody titers after 6 months of age and 6 infants had elevated serum IgM levels. Seven infants had motor or mental retardation or both, and 4 had heart murmurs. These children were of normal birth-weight and had no severe problems during the neonatal period; therefore, early diagnosis may depend upon laboratory techniques. Fetal rubella infection in the second trimester causes defects which are more "subtle" than those found in infants from mothers with infection at earlier stages of the pregnancy. Detection is difficult, but evaluation is indicated when maternal history is indicative or when the child is born during a rubella epidemic. (15 refs.)
B. Bradley.

601 North Broadway
Baltimore, Maryland 21205

805 KRAUS, BERTRAM S.; AMES, MARY D.; & CLARK, GERALD R. Effects of maternal rubella on dental crown development. *Clinical Pediatrics*, 8(4):204-215, 1969.

Analysis of 25 children (CA 3 to 6 yrs) with various rubella defects showed significantly more abnormalities as well as abnormal dental crowns. Control children (72) were obtained from records from the University of Washington. Statistical data is based on percentage of abnormal teeth, and there was a 9.4% incidence of abnormal teeth in rubella Ss and a 1.5% incidence in the control sample. Eleven of the 25 rubella children (44%) had one or more abnormal tooth crowns, while 9 out of 72 (12.5%) controls had these abnormalities. Six of the rubella children were considered to be MR. "Dentrochronology" may prove to be a useful technique in evaluating injuries of the fetus and the developing infant. (26 refs.) - *B. Bradley*.

University of Pittsburgh
Pittsburgh, Pennsylvania 15213

806 FORREST, JILL M.; MENSER, MARGARET A.; & REYE, R. D. K. Obstructive arterial lesions in rubella. *Lancet*, 1(7608):1263-1264, 1969. (Letter)

Five cases of congenital rubella necropsied showed a similar arterial vascular pathology of fibromuscular proliferation of the intima, especially of the pulmonary and systemic arteries. These lesions are often overlooked in known congenital rubella cases, and it well may be that cerebral, coronary, and peripheral vascular diseases are adult manifestations of subclinical congenital rubella infections. (9 refs.) - *L. E. Hays*.

Royal Alexandra Hospital for Children
Camperdown, New South Wales 2050, Australia

807 REED, GEORGE B., JR. Rubella bone lesions. *Journal of Pediatrics*, 74(2):208-213, 1969.

Areas of bone from 6 infants with the congenital rubella syndrome were examined histologically to determine the etiology of metaphyseal lucencies observed on radiologic examination. These lesions resulted from focal reduction of neonatal osteosclerosis (focal osteoporosis) and were more prominent in older infants. There was no evidence of an inflammatory process or failure of mineralization. It was hypothesized that viral infection caused arrest of mitotic activity and that certain cell clones were "slowed down" with a resultant focal failure of bone matrix formation. (13 refs.) - *E. L. Rowan*.

Childrens Hospital of Los Angeles
Los Angeles, California 90027

808 SAIDI, M.; GIRARDIN, G.; PARE, C.; & ARCHAMBAULT, R. Le purpura thrombocytopenique, un nouvel aspect clinique du syndrome de la rubeole congenitale (Thrombocytopenic purpura, a new aspect of congenital rubella). *Canadian Medical Association Journal*, 101(6):340-343, 1969.

A review of the medical literature on neonatal thrombocytopenic purpura as a clinical aspect of congenital rubella shows that of 1,098 cases of congenital rubella reported in 1960-1968, there were 275 cases of purpura and 325 cases of thrombocytopenia. The neonatal purpura usually disappears after a few days, and the thrombocytopenia disappears during the first few weeks or months of life. The pathology of thrombocytopenic purpura is still unknown, but it is thought that an allergic mechanism and/or a viral infection are important. Bone marrow biopsies show an absence or marked decrease of megakaryocytes; this condition spontaneously returns to normal within a few months. (69 refs.) *M. G. Conant*.

Hopital Ste-Justine
Montreal, Quebec, Canada

809 HARDY, JANET B.; SEVER, JOHN L.; & GILKESON, MARY R. Declining antibody titers in children with congenital rubella. *Journal of Pediatrics*, 75(2):213-220, 1969.

Serum-neutralizing (SN), complement fixing (CF), and hemagglutination-inhibiting (HI) antibodies were serially determined during 20-40 months of age in 20 infants with congenital rubella infection; 18 had 4-fold or greater decline of the titer during the period. Two of the 18 had no detectable antibody, but rubella virus was isolated from both. At the end of the observation period, 7 children had no detectable antibody. Thus, the retrospective diagnosis of the congenital rubella infection may be difficult. The immunologic mechanisms need further clarification. (15 refs.) - *L. S. Ho*.

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Baltimore, Maryland 21205

810 McCRACKEN, GEORGE H., JR.; CHEN, T. C.; *HARDY, JANET B.; & TZAN, NANCY. Serum immunoglobulin levels in newborn infants. I. Evaluation of a radial diffusion plate method. *Journal of Pediatrics*, 74(3):378-382, 1969.

A radial diffusion plate method (RDPM) used to make immunoglobulin (IG) level determinations in newborns was found to be simple, reliable, and suitable for screening purposes. IG levels were determined in umbilical cord serum from 2,600 infants enrolled in the Johns Hopkins Collaborative Perinatal Study to assess the value of serum IgM and IgA levels as screening factors for infection. Five study sera (0.01 ml of serum) were run on each antiserum agar plate and a sixth reference standard was added to be certain that each plate gave uniform and precise precipitin rings. Six dilutions of the standard serum were run at the same time as the test sera and repeated 6 times during the test day. The plates were stored in a moist chamber at room temperature for 24 hours, at which time the precipitin rings were read on a calibrated rule with a magnifying glass. Standard reference curves for each IG were prepared on similogarithmic graph paper correlating the concentration of globulins with their ring diameters. Six dilution points were used to establish each curve with multiple determinations/point. Quantities of IG in test sera were then determined by relating the diameter of the precipitin ring to the reference ring. The observed mean for the undiluted standard serum based on 14 days of consecutive testing was 161.50 mg % as compared to 160 mg % for the standard value of the reference standard, and the standard deviation was 15.55 mg %. (8 refs.) - *F. J. McNulty*.

*Johns Hopkins Hospital
Baltimore, Maryland 21205

811 McCRACKEN, GEORGE H., JR.; *HARDY, JANET B.; CHEN, T. C.; HOFFMAN, LEONARD S.; GILKESON, MARY R.; & SEVER, JOHN L. Serum immunoglobulin levels in newborn infants. II. Survey of cord and follow-up sera from 123 infants with congenital rubella. *Journal of Pediatrics*, 74(3):383-392, 1969.

Immunoglobulin M (IgM) values in newborn infants were unsatisfactory as screening devices for intrauterine infections. In 88 infants with confirmed congenital rubella, the screening test as administered would have singled out only 16. Elevated IgM levels are, nevertheless, useful in confirming the clinical suspicion of intrauterine infection. The most severely affected infants, those with higher IgM values, tend to be small for gestational age. Other cord immunoglobulins do not appear useful in the identification of congenital infections. Immunoelectrophoresis will identify cord sera with IgM values in the range of 2 mg %; however, a more quantitative method must be used to determine the actual level. During the first 6 months of life, 37% of the rubella infants had IgM values above the 2 standard deviations limit. The geometric mean values for IgM and IgA were significantly higher at 2, 4, and 6 months of age than the mean values for the control infants. After 6 months of age, almost all of the IgM and IgA values for infants with rubella fall within the 2 standard deviations limit; however, their geometric mean values are consistently higher than for control infants, although not significantly. (15 refs.) - *F. J. McNulty*.

*Johns Hopkins Hospital
Baltimore, Maryland 21205

812 HALSTEAD, SCOTT B.; DIWAN, ARWIN R.; & ODA, ALBERT I. Susceptibility to rubella among adolescents and adults in Hawaii. *Journal of the American Medical Association*, 210(10):1881-1883, 1969.

The proportion of persons susceptible to rubella virus (hemagglutination antibody inhibition titer less than 1:10) was extremely high in 590 adolescent and adult residents of Hawaii. Rates of susceptibility on 4 different islands varied from 25% to 50% in serum samples submitted for premarital or prenatal serology. Females were more susceptible than males, and ethnic Japanese more susceptible than whites or ethnic Hawaiians. At the University of Hawaii, students with life-long residence on the islands were 2 1/2 times more susceptible than students who had spent at least part of their childhood elsewhere. The susceptibility rate of 80% in college females of life-long Hawaiian residence is among the highest in the world. Such susceptibility in women of child-bearing age constitutes a major public health problem, and a program of artificial immunization is indicated. (4 refs.) - *E. L. Rowan*.

3675 Kilauea Avenue
Honolulu, Hawaii 96816

813 GRAYSTON, J. THOMAS; DETELS, ROGER; CHEN, K. P.; GUTMAN, LAURA; KIM, KENNETH S. W.; GALE, JAMES L.; & BEASLEY, R. PALMER. Field trial of live attenuated rubella virus vaccine during an epidemic on Taiwan. *Journal of the American Medical Association*, 207(6):1107-1110, 1969.

Three experimental rubella vaccines, modifications of HPV-77 vaccine, were used in a field trial during an epidemic on Taiwan, and all 3 vaccines had a 93 to 94% effectiveness. Male students, grades 1 to 4, were vaccinated with one of 3 rubella vaccines or a placebo vaccine. The 3 rubella vaccines were HPV-77 plus 3 additional African green monkey kidney cell culture passages (AGMK), HPV-77 plus 5 duck embryo cell culture passages (DECC), and HPV-77 plus 12 dog kidney cell culture passages (DK). One thousand nine hundred and eighty-four boys were vaccinated with the 3 vaccines in the Taipei Schools (which had a total of 10,009 children), and there were 1,275 boys vaccinated with the 3 vaccines in the Taichung Schools (which had a total of 5,163 children). In Taipei, there was a high rubella attack rate during the first and second weeks after vaccination for the boys who had received the rubella vaccines and for the boys who had received the placebo. There was a reduction of the attack rate in the rubella vaccine groups during the third week, but that of the placebo group continued to rise. In all schools there was a total of 25 rubella cases in the rubella vaccine groups by the end of the third week, and 20 of these had occurred by the sixteenth day. Three serious reactions occurred following injection with the DK rubella vaccine. The pathogenesis of the 3 reactions remains unknown; however, it appears to be specific for the DK vaccine. (11 refs.) - *F. J. McNulty*.

University of Washington
Seattle, Washington 98105

814 HILLARY, I. B.; MEENAN, P. N.; GRIFFITH, A. H.; DRAPER, C. C.; & LAURENCE, G. D. Rubella vaccine trial in children. *British Medical Journal*, 2(5656):531-532, 1969.

A clinical trial with RA 27/3 (Plotkin strain) attenuated rubella virus was carried out in 19 isolated rural families in Ireland. The youngest non-immune female in the family generally received the vaccine and made daily contact with non-immune siblings. All 19 girls became immunized and showed satisfactory post-vaccination hemagglutinating-antibody titers. Clinical reactions were minimal. None of the 53 rubella-susceptible contacts showed seroconversion and had not been infected by the vaccine. This virus strain appears to be acceptable for vaccine manufacture. (9 refs.) - *E. L. Rowan*.

University College
Dublin, Ireland

815 PARKMAN, PAUL D. Research prospects--Rubella vaccine. *Mental Retardation/MR*, 7(2):11-16, 1969.

Experimentation with rubella virus vaccines indicates that vaccines have been developed which are attentuated, non-communicable, and capable of protection against maternal-fetal infection with rubella and its resultant birth defects including MR, deafness, congenital heart disease and growth failure. The rubella virus is attenuated by serial cell culture passage in monkey kidney cells (MK), chick embryo, duck embryo, rabbit kidney, and diploid human cell cultures. Pregnant rhesus monkeys inoculated with virulent virus had virus recovered from the fetal tissues in 5 of 6 cases, whereas animals inoculated with attentuated virus were negative for virus in the maternal and fetal specimens. HPV-77, a 77-passage level MK propagated virus and HPV-77 derivative vaccines were studied clinically in 260 rubella susceptible individuals. None of the vaccinees had illness, and 96% developed protective antibodies. The transmissibility of a modified virus infection from a vaccinated child to a pregnant adult woman was studied by having rubella susceptible Ss live with the vaccinees. None of the 221 Ss were infected; this indicates HPV-77 virus is not communicable. The assay of antibodies after vaccination indicated a long-term immunity. Virologic studies on 5 girls vaccinated 8-12 months earlier with HPV-77 and controls that were similarly inoculated intranasally with natural R virus indicated that the control group shed virus in their throat secretions and blood specimens, whereas in the vaccinated group, throat swabs or blood samples did not contain virus. (No refs.) - *F. J. McNulty*.

National Institutes of Health
Bethesda, Maryland 20014

816 SEVER, JOHN L.; FUCCILLO, DAVID A.; SCHACHER, STEPHEN A.; & POPOLOW, MICHAEL L. Rubella vaccine: GIL P-48 strain in volunteers. *American Journal of Epidemiology*, 90(2):126-129, 1969.

The Gil Passage-48 strain of attenuated rubella virus vaccines was given to 4 adult

male volunteers (previously negative for rubella antibody), and the antibody response without clinical disease was similar to that seen with at least 4 other vaccines. All 4 volunteers remained afebrile, but virus was recovered from the nasopharynx in 3 between the thirteenth and seventeenth days following inoculation. These 3 men also showed a marked elevation in hemagglutination-inhibition antibody titer, and all developed neutralizing antibodies by day sixteen. Further clinical trials with this vaccine are indicated. (16 refs.) - *E. L. Rowan.*

National Institute of Neurological Diseases and Stroke
Bethesda, Maryland 20014

817 DAYAN, A. D.; & CUMINGS, J. N. An infantile case of subacute sclerosing panencephalitis with an abnormal ganglioside pattern in the brain. *Archives of Disease in Childhood*, 44(234):187-196, 1969.

At the age of 2 months, a male infant developed occasional attacks of twitching which continued until the age of 4 months, when he began to have grand mal seizures which occurred daily despite symptomatic treatment. Death occurred at age 5 months due to bronchopneumonia. Histological and electron microscopic studies on necropsy samples on brain tissue supported a diagnosis of subacute sclerosing panencephalitis and revealed measles virus-like filaments in the parenchymal cells of the brain. The Purkinje cell dendrites in the cerebellum were extremely abnormal, with swellings at the ends of the dendrites. The cerebral lipids had an abnormal distribution pattern, with relative excesses of GM_3 and GM_4 in both cortex and white matter. A temperate viral infection with measles virus was probably responsible for both the morphological and the biochemical lesions. (19 refs.) - *M. G. Conant.*

Hospital for Sick Children
London, W.C. 1, England

818 MAROS, T.; & LAZAR, L. Involvement of the optic system in experimental allergic encephalomyelitis in the dog. *Acta Morphologica Academiae Scientiarum Hungaricae*, 16(3):253-263, 1969.

In 20 dogs with experimental allergic encephalomyelitis, changes occurred in the optic system which were similar to those which occur in human demyelinating encephalomyelitis and multiple sclerosis. Three dogs had bilateral complete blindness, 6 had vision disorders, and 10 had circulatory disturbances in the optic system. Microscopically, in 12 animals, there were conspicuous signs of demyelination in the optic nerve, optic chiasma, and optic tract. In addition, damage very often occurred in the spinal cord. Functional changes in local circulation appear to be important in the localization of allergic and hyperergic processes; the functional stresses on the human optic system may be regarded as one important reason that the optic system is so often involved in human multiple sclerosis. (32 refs.) - *V. G. Votano.*

Institute of Medicine and Pharmacology
Tirgu-Mures, Rumania

819 Panencephalitis and measles. *British Medical Journal*, 2(5648):2-3, 1969. (Editorial)

Subacute sclerosing panencephalitis (SSPE) appears to be a consequence of infectious processes in the central nervous system and may include as etiological agents: a persistent non-productive infection with measles or similar viruses; a slow virus infection; or a synergistic relation between a persistent measles infection and one or more slow virus infections. Because the possibility exists of transmission of the etiological agent through the new vaccines, an adequate system for long-term surveillance of vaccinees is urgently needed. In addition, the questions of the incidence of measles infections needed to "prime" a host for persistent infection and the probabilities of a new vaccine carrying slow viruses need further research. (13 refs.) - *R. K. Butler.*

820 UNTERHARNSCHEIDT, FRIEDRICH; DE BEUKELAER, MARTIN; & SIMON, JIMMY L. Chronic untreated coccidioidomycosis of the central nervous system: A case of 7 1/2 years duration. *Texas Reports on Biology and Medicine*, 27(2):513-531, 1969.

A 10-year-old SMR boy who had had several grand mal seizures since the age of 1 and 1/2 years and who was admitted to the hospital in an epileptic state was found after his death autopsy to have had chronic meningoencephalitis due to infection with *Coccidioides immitis*. The cerebral parenchyma was heavily damaged, and the entire cortex was replaced by cystic cavities and mesodermal glial scar tissue. The neurons of the Ammon's horn band and cerebellum were almost completely destroyed, probably secondary to hypoxia. The 7 and 1/2 years survival time without specific

treatment is the second longest ever reported for this disease. (95 refs.) - *L. S. Ho.*

University of Texas Medical Branch
Galveston, Texas 77550

821 WALLACH, EDWARD E.; BRODY, JEROME I.; & OSKI, FRANK A. Fetal immunization as a consequence of bacilluria during pregnancy. *Obstetrics and Gynecology*, 33(1):100-105, 1969.

Peripheral lymphocytes obtained from 12 newborn infants whose mothers had significant *Escherichia coli* bacilluria between the tenth and thirty-seventh weeks of pregnancy were cultured within 24 hours of birth, and 10 of the cultures showed induced mitosis by *E. coli* antigen. The remaining 2 cultures were contaminated, and the tissue died. Similar experiments in a control group showed only 2 of 10 infants to be positive for mitotic figures. The morbidity of infants of bacilluric mothers was striking: one case of *E. coli* omphalitis, 2 of respiratory stress, 3 of neonatal jaundice, one of microcephaly, and 2 infants with birth-weights below 2,500 gm. The anamnestic response to *E. coli* antigen in infants of bacilluric mothers and the possibility that intrauterine contact with this antigen may be associated with various fetal abnormalities indicate a need for more research in this area. (15 refs.) - *L. S. Ho.*

Hospital of the University of Pennsylvania
Philadelphia, Pennsylvania 19104

822 HOCHMAN, I. H.; HENIG, E.; & WEINSTEIN, M. Salmonella typhi murium meningitis in an infant: Case report. *Clinical Pediatrics*, 8(5):283-285, 1969.

A severe meningitis which occurred in a 3-month-old Israeli boy was caused by *Salmonella typhimurium*. An initial "shotgun" treatment was supplanted by intravenous ampicillin and chloramphenicol after culture and sensitivity studies were completed; however, no sterile spinal fluids were drawn until after the introduction of intrathecal ampicillin therapy. The child survived this usually fatal illness, but there was evidence of hydrocephalus and mild motor retardation on follow-up examination at age 14 months. (16 refs.) - *E. L. Rowan.*

Beilinson Hospital
Petah Tiqua, Israel

823 SAMSON, JOHN H.; APTHORP, JAMES; & FINLEY, ALAN. Febrile seizures and purulent meningitis. *Journal of the American Medical Association*, 210(10):1918-1919, 1969.

Meningitis must be ruled out in all cases of fever and convulsions, especially in infants who commonly fail to show the classic signs of meningeal irritation (nuchal rigidity, Brudzinski's sign, bulging fontanelle, depressed sensorium). Among 152 cases of bacterial meningitis there were 27 who presented with fever and a seizure. Eleven of these (all caused by *Haemophilus influenzae*) failed to show any meningeal signs, and 4 had other sources of infection. These 11 were under 16 months of age. If lumbar puncture had not been done to rule out meningitis in these cases, then this potentially fatal disease might not have been discovered in time. (6 refs.) - *E. L. Rowan.*

4650 Sunset Boulevard
Los Angeles, California 90027

824 BELSEY, MARK A.; HOFFPAUIR, CALVIN W.; & SMITH, MARGARET H. D. Dexamethasone in the treatment of acute bacterial meningitis: The effect of study design on the interpretation of results. *Pediatrics*, 44(4):503-513, 1969.

The administration of low doses of dexamethasone was found to be without significant effect as an adjunct of antimicrobial treatment in patients with meningitis who were matched for age, clinical severity of disease, and etiologic agent. One hundred and two infants and children (43 matched pairs and 16 unmatched Ss) with purulent meningitis admitted to the Tulane and Louisiana State University services of the Pediatric Contagious Disease Unit of the Charity Hospital of Louisiana at New Orleans between July 1963 and May 1964 were included in the study. These Ss were compared with another meningitis population during a comparable period in 1961-1962. The steroid-treated Ss in the present study developed fewer subdural effusions, were afebrile sooner, and had an earlier return to a normal cerebrospinal fluid-glucose level than the placebo-treated group. Contradictory results may result from inherent differences in the severity of meningitis in the study and control group Ss. (36 refs.) - *F. J. McNulty.*

Tulane University School of Medicine
New Orleans, Louisiana 70122

825 SAROSI, GEORGE A.; PARKER, JAMES D.; DOTO, IRENE L.; & *TOSH, FRED E. Amphotericin B in cryptococcal meningitis: Long-term results of treatment. *Annals of Internal Medicine*, 71(6):1079-1088, 1969.

Thirty-one patients with cryptococcal meningitis were treated intravenously with amphotericin B, and 15 also received intrathecal therapy. During initial treatment, 9 patients (29%) died, and the outcome of therapy tended to be worse in older patients and in those who had coexisting disease. Of the 22 surviving patients, 4 had relapses from 6 weeks to 29 months after completion of the initial treatment, and 3 of these died despite a second course of therapy, while 2 additional patients died of other causes. The remaining 17 patients have been followed for 2-12 years (average 7.5 yrs), and only 4 show significant neurological damage. This study supports the effectiveness of amphotericin B in the treatment of cryptococcal meningitis and emphasizes the importance of early recognition of relapses through frequent follow-up examinations. (24 refs.) - *M. G. Conant.*

*National Communicable Disease Center
Kansas City, Kansas 66103

826 WILSON, MIRIAM G.; & STEIN, ARTHUR M. Teratogenic effects of Asian influenza. An extended study. *Journal of the American Medical Association*, 210(2):336-337, 1969.

Asian influenza infection during pregnancy does not appear to have a teratogenic effect. Among 487 pregnancies which occurred during the Asian influenza epidemic in 1957, the incidence of gross congenital anomalies of the children was 1.4%, comparable to that for newborns. There was no significant difference between children of mothers with positive hemagglutination-inhibition (HI) titers and children of mothers with negative HI titers. (9 refs.) - *L. S. Ho.*

1200 North State Street
Los Angeles, California 90033

827 Australia antigen and hepatitis. *Lancet*, 2(7612):143-144, 1969. (Editorial)

Australia (Au) antigen, thought to be the virus causing viral hepatitis, is found significantly more frequently in institutionalized patients with Down's syndrome than in other institutionalized patients, and in the Down's syndrome patients positive for Au antigen, the levels of serum-glutamic-pyruvic-transaminase are significantly higher, and there is histological evidence of chronic hepatitis. (16 refs.) - *M. G. Conant.*

828 LEVIN, JOEL M.; & BOSHES, LOUIS D. Auto-immunity and the central nervous system. *Diseases of the Nervous System*, 30(4):273-279, 1969.

Auto-immunity may be the key to understanding chronic diseases of the nervous tissue. Demyelinating diseases have many similarities with experimental allergic encephalomyelitis (EAE), and EAE represents the strongest experimental model for auto-immune mechanisms in these diseases. Experimental allergic encephalomyelitis fits the requirements of auto-immune disease in that a circulating antibody has been demonstrated, characterized and produced in an animal model, and it has also been shown to have an association with other conditions known to be auto-immune. The discoveries of the past decade as applied to demyelinating diseases and attempts to meet proposed postulates for auto-immune disease lead to speculation that demyelination is an end result of an antigen-antibody reaction occurring within nervous tissue; however, much more research is needed. (48 refs.) *R. K. Butler.*

Chicago Medical School
Chicago, Illinois 60612

829 HATHAWAY, WILLIAM E.; MULL, MARILYN M.; & PECHET, GISELLE S. Disseminated intravascular coagulation in the newborn. *Pediatrics*, 43(2):233-240, 1969.

Eleven of 19 sick newborn infants studied had disseminated intravascular coagulation (DIC) with findings including low platelets, low fibrinogen, low factor V (proaccelerin) and low factor VIII (antihemophilic factor). Two cases had severe consumption coagulopathy, including low platelets, low fibrinogen, and low factors V and VIII. Histologically, both cases had fibrin thrombi and diffuse hemorrhagic lesions. Infants with severe idiopathic respiratory distress syndrome (IRDS) showed variable thrombocytopenia, prolongation of the thrombelastogram (TEG) value, and decreases in factors V and VIII. Serum fibrin split products (FSP) were occasionally positive. Hemorrhage predominated in addition to pulmonary hyaline membrane. Bleeding times were prolonged in the most severely affected infants, who were also the most thrombocytopenic. The infants with mild IRDS did not show any coagulation abnormalities except

mild prolongation of the TEG value and increased amounts of FSP. This is the first report of severe DIC associated with an intrauterine infection. Patients with severe IRDS had laboratory signs of varying degrees of consumption coagulopathy without evidence of associated infection. In the cases of probable DIC, only 3 out of 8 showed FSP, while most of the infants with mild illness and no evidence for DIC did demonstrate FSP. DIC diagnosis should be made with specific clotting factor assays. (23 refs.)
F. J. McNulty.

University of Colorado Medical Center
Denver, Colorado 80220

830 BARLTROP, DONALD; & KILLALA, N. J. P. Factors influencing exposure of children to lead. *Archives of Disease in Childhood*, 44(236):476-479, 1969.

Paint samples in homes of 103 children in London (England) were analyzed to determine factors influencing lead poisoning in children and to aid in prevention of this condition. One hundred and eight samples of paint from 2 locations in the room occupied by the child were used for this analysis; 56 homes were included. These homes had 69 children (CA 1-5 yrs) with a total child population of 103 ranging from 0 to 14 children/home. More than one-half of the homes had more lead than recommended for indoor surfaces. There was a relation between the age of property and the lead content of paint samples. In addition, there was a relation to the social class of the family. Old houses and families of low social class were more often associated with indoor paint with a high lead content. Removal of lead paint should be the goal in the prevention of lead poisoning; repainting of surfaces is not sufficient. (10 refs.)
B. Bradley.

St. Mary's Hospital Medical School
London, W.2, England

831 FELDMAN, FELIX; LICHTMAN, HERBERT C.; ORANSKY, STANLEY; ANA, ELADIA STA; & REISER, LLOYD. Serum δ-aminolevulinic acid in plumbism. *Journal of Pediatrics*, 74(6): 917-923, 1969.

Blood lead and serum δ-aminolevulinic acid (δ-ALA) levels were determined in groups of children (CA 1-4 yrs) with increased lead absorption (16 children), lead intoxication (16 children), or lead encephalopathy (7 children). Blood lead levels were higher in children with intoxication, but there was some overlap between these values and those for children with increased lead absorption but no intoxication. Serum δ-ALA levels of intoxicated children were consistently higher with no overlap with levels of children with increased absorption. Patients with encephalopathy showed markedly elevated levels of both blood lead and serum δ-ALA. The correlation between lead and δ-ALA values was poor, and cerebrospinal fluid δ-ALA levels were consistently lower than serum values. Determination of serum δ-ALA levels appears to be a sensitive way of differentiating between intoxicated children and those only exposed to increased amounts of lead. (12 refs.)
M. G. Conant.

Coney Island Hospital
Brooklyn, New York 11219

832 HUTTENLOCHER, PETER R.; SCHWARTZ, ALLEN D.; & KLATSKIN, GERALD. Reye's syndrome: Ammonia intoxication as a possible factor in the encephalopathy. *Pediatrics*, 43(3):443-454, 1969.

Laboratory investigation in 10 cases of Reye's syndrome suggests that the acute encephalopathy may result from ammonia intoxication secondary to acute hepatic failure. These patients typically present as recovering from a mild viral illness when protracted vomiting supervenes. Evidence of excessive central nervous system stimulation may then be followed by marked depression of cerebral and brain stem functions. Liver function studies show transient but marked elevations in SGOT and ammonia but normal or only slightly elevated bilirubin. If the child survives, liver function quickly returns to normal and fatty infiltration resolves. In this series, 4 children died and one had severe brain damage. Reye's syndrome appears to be a distinct clinical entity, and emergency liver function studies should be done in any patient with encephalopathy of unknown etiology. Vigorous therapy for hepatic failure may be successful if initiated early enough; however, 2 of the 3 patients so treated already had signs of brain stem dysfunction and died despite such treatment. (37 refs.) - *E. L. Rowan.*

Yale University School of Medicine
New Haven, Connecticut 06510

833 DODGE, PHILIP R.; KISSANE, JOHN M.; PRENSKY, ARTHUR L.; & *KAHN, LAWRENCE I. Acute encephalopathy with severe liver dysfunction. *Clinical Pediatrics*, 8(3):154-160, 1969.

Reye's syndrome consists of acute encephalopathy and fatty infiltration of the liver. A 20-month-old girl presented a typical history of mild upper respiratory infection with subsequent coma and melena. Laboratory studies showed severe hypoglycemia non-responsive to glucose, persistent acidosis, and elevated liver enzymes. EEG showed voltage suppression. Despite vigorous therapy aimed at reduction of cerebral edema, control of seizures, correction of acidosis, elevation of glucose, and assistance of ventilation, the patient expired. At autopsy there were panlobular fatty changes of the liver, fatty changes in the renal proximal tubules, and cerebral edema. The etiology of Reye's syndrome is obscure, but it is thought to result from a toxin acting upon these different organ systems. (5 refs.) - *E. L. Rowan.*

*500 South Kingshighway
St. Louis, Missouri 63110

834 STRELLING, M. KEITH. Brain damage from congenital pernicious anaemia. *Developmental Medicine and Child Neurology*, 11(3): 378-380, 1969. (Annotation)

Congenital pernicious anemia may result from a metabolic error in the production of the intrinsic factor necessary for vitamin B_{12} absorption. Vitamin B_{12} is necessary for the integrity of myelin in the central nervous system, and it is not surprising that some infants with severe pernicious anemia have permanent brain damage. Failure to make the correct diagnosis initially and treatment with folic acid may result in the hematological cross-response of further deficiency of vitamin B_{12} and greater damage to the developing brain. (18 refs.) - *E. L. Rowan.*

Plymouth General Hospital
Plymouth, Devon, England

835 MONTELEONE, JAMES A. Hypertensive encephalopathy with overdosage of deoxycorticosterone. *Pediatrics*, 43(2):294-295, 1969.

A white male infant diagnosed as having the adrenogenital syndrome suffered permanent brain damage following overdosage with deoxycorticosterone (DOCA). He had presented at 3 weeks of age with weight loss, shock, a serum potassium value of 8.0 mEg/liter, a sodium value of 135 mEg/liter, blood urea nitrogen at 69.2 mg/100 ml, urinary 24-hour ketosteroid excretion at 4.0 mg, and pregnanetriol excretion at 7.1 mg/day. A regimen of 30 mg/day of hydrocortisone and 3.0 mg of DOCA returned the steroid excretion to normal. At 3 months of age, 6 pellets of DOCA (125 mg each) were inserted subcutaneously in the infrascapular area. Two weeks later, the patient became comatose, convulsed, and had a blood pressure of 220/160 mg Hg. Intravenous fluids were started; 5 of the 6 pellets were removed, and reserpine and apresoline were administered for 2 weeks. Although the blood pressure returned to normal by 6 months of age, hypertensive encephalopathy and permanent MR had occurred. (1 ref.) - *A. Huffer.*

St. Louis University School of Medicine
St. Louis, Missouri 63104

836 MARKS, JAMES F.; & FINK, CHESTER W. Hypertensive encephalopathy and deoxycorticosterone. *Pediatrics*, 43(2):302-303, 1969, (Letter)

Since the implantation of deoxycorticosterone pellets in children with congenital adrenal hyperplasia has resulted in some cases of hypertension and encephalopathy, fewer pellets should be used and α-fluoro hydrocortisone should be given orally to make up the difference. (1 ref.) - *A. Huffer.*

University of Texas
Dallas, Texas 75235

837 DESMOND, MURDINA M.; RUDOLPH, ARNOLD J.; HILL, REBA M.; CLAGHORN, JAMES L.; DREESEN, PHILIP R.; & BURGDORFF, IMOGENE. Behavioral alterations in infants born to mothers on psychoactive medication during pregnancy. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 14, p. 235-244.

Behavioral alterations in some infants born to mothers on intensive psychoactive drug therapy during late pregnancy appear during the neonatal period and early infancy and last for a period of months. Alterations have been related to the opiates, *Rauwolfia* compounds, alchohol, and tranquilizers. Maternal opiate addiction is related to small birth-weight, depression at delivery, withdrawal, and a developmental pattern characterized by delayed motor development and socialization in early months followed by a period of rapid development. The early effects of

Rauwolfia compounds are nasal congestion, bradycardia, vasodilation, thermal instability, hypertonicity, and tremors. Abnormal patterns of clinical behavior were observed in the offspring of mothers who received major or minor tranquilizers in large dosages. These infants showed deep skin creases, persistence of intrauterine position, and postnatal depression followed by agitation or agitation within minutes of delivery. The duration of the agitation phase was from one to 7 months, and wide variations in intensity were found. Management procedures for infants with behavioral alterations should include diminished sensory input, the use of a pacifier between feedings, holding and walking in an upright position and sleeping in a prone position, frequent feedings, minimum sedation, and frequent consultations with the mother during the agitation period. At the present time, the relation between infant behavioral alterations related to maternal psychoactive medication during pregnancy and later cognitive development has not been established. (18 refs.) - *J. K. Wyatt.*

838 YOUNOSZAI, M. K.; PELOSO, JEAN; & *HAWORTH, J. C. Fetal growth retardation in rats exposed to cigarette smoke during pregnancy. *American Journal of Obstetrics and Gynecology*, 104(8):1207-1213, 1969.

Groups of pregnant rats were placed in a smoking chamber for 4 minutes, 5 times daily from the third to the twenty-second day of pregnancy and exposed to smoke from tobacco cigarettes containing 15 mg nicotine, lettuce leaf cigarettes, or lettuce leaf cigarettes containing 15 mg of added nicotine. The carbon monoxide level in the hemoglobin was thus maintained at 2-8% for 10 hours during the day. Growth retardation was observed in all experimental rats, and those exposed to tobacco smoke were the most severely affected. Since cigarette smoke had an anorexic effect, the food intake of several other groups of rats was restricted to 55-60% and 70-80% of that of control rats fed *ad libitum*. The fetal body weight increased with increasing food intake during pregnancy and was decreased in proportion to the decreased food intake in rats exposed to lettuce leaf smoke, with or without nicotine. However, the fetal weight of rats exposed to tobacco smoke was reduced much more than expected from the decreased food intake. Tobacco smoke may contain unrecognized factors which have growth retarding effects in addition to the anorexic effect. (20 refs.) - *M. G. Conant.*

*The Children's Hospital
Winnipeg 3, Manitoba, Canada

839 De WOLF-PEETERS, C.; MOENS-BULLENS, A. M.; VAN ASSCHE, A.; & DESMET, V. J. Conjugated bilirubin in foetal liver in erythroblastosis. *Lancet*, 1(7592):471, 1969. (Letter)

Normally, a few days after birth, the accumulation of bilirubin in the liver triggers activation of the bilirubin-glucuronyltransferase system for the conjugation and subsequent excretion of bilirubin. Conjugation appears *in utero* in fetuses with erythroblastosis, and in postmortem examination of hepatic tissue from such fetuses (28 to 33 weeks gestation), there was an accumulation of extracellular bile thrombi which contained both unconjugated and conjugated bilirubin. (5 refs.) - *E. L. Rowan.*

Academisch Ziekenhuis St. Rafael
Leuven, Belgium

840 JANSEN, F. H.; MALVAUZ, P.; HEIRWEGH, K. P. M.; & DEVRIENDT, A. Congenital non-hemolytic jaundice: Crigler-Najjar syndrome. *Biologia Neonatorum*, 14(1-2):53-61, 1969.

The Crigler-Najjar syndrome consists of congenital non-hemolytic jaundice (due to a high concentration of unconjugated bilirubin) with subsequent kernicterus and neurological deficits. The postulated defect is that of a liver enzyme which normally catalyzes the conjugation of bilirubin with glucuronic acid. Evidence for such a mechanism is supported by investigation of an infant with Crigler-Najjar syndrome who was unable to conjugate a sulfonamide with glucuronic acid (the normal metabolic route) but instead excreted an acetylated form. Spectral and chromatographic observations of the urine of this patient revealed 2 diazo-positive bilirubin derivatives. Further work is needed in order to identify the metabolites and to establish the probably variable biochemical defects responsible for this syndrome. (29 refs.) *E. L. Rowan.*

Akademisch Ziekenhuis St. Rafael
Leuven, Belgium

841 KRAMER, LLOYD I. Advancement of dermal icterus in the jaundiced newborn. *American Journal of Diseases of Children*, 118(3):454-458, 1969.

Observations on 108 full-term newborn infants suggest that a predictable relation exists between blood serum bilirubin concentrations

and the cephalo-pedal progression of dermal icterus; therefore, simple visual inspection under blue-white fluorescent lighting may be useful in the management of full-term, normal weight infants with hyperbilirubinemia. All infants (85 with no hemolytic disease, 18 with ABO hemolytic disease, and 5 with Rh hemolytic disease) were examined at least once a day, and those with rapidly progressing dermal icterus were examined 2 to 4 times daily. Five dermal zones were found to exist including: head and neck (a serum bilirubin concentration between 4 and 8 mg/100 ml); the trunk as far as the umbilicus (levels between 5 and 12 mg/100 ml); the groin and upper thighs (level of 8 to 16 mg/100); knees and elbows to ankles and wrists (levels between 11 and 18 mg/100 ml); and the feet and hands (levels greater than 15 mg/100 ml). The cephalo-pedal progression of skin icterus continued only as long as the serum bilirubin increased. When bilirubin levels began to fall in the blood, the dermal icterus faded gradually in all affected areas at the same time. This rapid diagnostic method was found not to be as effective with low birth-weight infants as with infants of normal birth-weight. (16 refs.) - *V. G. Votano.*

University of Florida College of Medicine
Gainesville, Florida 32601

842 FOG, J.; BRATLID, D.; & BLYSTAD, W. Bilirubin conjugation in a 28-week fetus. *Lancet,* 1(7592):471, 1969. (Letter).

Normally, the conjugating process necessary for the excretion of bilirubin is not activated until after birth; however, in cases of severe erythroblastosis fetalis, the fetus has been found to conjugate bilirubin *in utero*. Amniocentesis was performed on an immunized woman during the twenty-eighth week of gestation and nearly 1/2 the bilirubin found in the amniotic fluid was in conjugated form. (7 refs.) - *E. L. Rowan.*

University of Oslo
Oslo, Norway

843 PHORNPHUTKUL, CHARLI; WHITAKER, JO ANNE; & WORATHUMRONG, NIMMUAN. Severe hyperbilirubinemia in Thai newborns in association with erythrocyte G6PD deficiency. *Clinical Pediatrics,* 8(5):275-278, 1969.

Glucose-6-phosphate dehydrogenase (G6PD) deficiency is an important cause of severe neonatal jaundice in numerous ethnic groups including the Thais. At the Chiang Mai Hospital in Northern Thailand, 1.48% of newborns (N=25) had bilirubin values greater than 15 mg/100 ml. Sixteen (64%) of these had G6PD deficiency. Seventy-one percent of these infants developed jaundice within the first 2 days of life. The methemoglobin reduction test, Sigma Kit, and quantitative analysis of erythrocyte G6PD were equally reliable, so that all jaundiced infants in this area should be tested for G6PD and exchange transfusion given if necessary in order to prevent kernicterus. (28 refs.) - *E. L. Rowan.*

Children's Hospital Medical Center
Boston, Massachusetts 02115

844 BEHRMAN, R. E.; & HSIA, DAVID YI YUNG. Summary of a symposium on phototherapy for hyperbilirubinemia. *Journal of Pediatrics,* 75(4):718-726, 1969.

A review of normal bilirubin metabolism, the cellular toxicity of bilirubin, and the biological effects of light therapy in the newborn infant was presented at a symposium. Phototherapy is indicated for use for infants in whom the risk of hyperbilirubinemia is great, for infants whose clinical conditions may indicate a later transfusion exchange, and for premature infants whose condition would not tolerate a transfusion. Phototherapy may be used following an exchange transfusion in order to prevent a possible subsequent exchange transfusion. Infants who have clinical indications for exchange transfusion should not have the transfusion delayed for a trial of phototherapy. Phototherapy should not be started unless the serum indirect bilirubin concentration is at least 10 mg/100 ml, and it should be discontinued after 24 to 36 hours if there is no response. In a response after 12 to 24 hours, light therapy should be halted for 6 to 12 hours to evaluate the treatment. Wave lengths between 300 and 600 mμ from 200 to 400 foot-candles used on premature infants should be effective in reducing serum bilirubin concentrations. The eyes of the infant must be shielded and the body temperature monitored. Infants treated with phototherapy will need follow-up visits because delayed severe anemia may occur. Pediatricians should consider phototherapy as carefully as they would a new drug when deciding the treatment of newborn infants. (17 refs.) - *E. Hays.*

University of Illinois Research and
Educational Hospital
Chicago, Illinois 60612

845 PORTO, SERGIO O.; PILDES, ROSITA S.; & GOODMAN, HAROLD. Studies on the effect of phototherapy on neonatal hyperbilirubinemia among low-birth-weight infants. I. Skin color. *Journal of Pediatrics*, 75(6, Part I):1045-1047, 1969.

Phototherapy (blue fluorescent light) resulted in a significant decrease in serum bilirubin in a group of low birth-weight (less than 2,500 g) infants regardless of skin color. A total of 23 Caucasian and 29 Negro infants were assigned phototherapy or control conditions on a random basis. Serum bilirubin values rose about 5 mg/100 ml during the first 5 days of life, as expected in the control groups, but in the treated groups, the concentrations remained close to the values obtained on day one. Skin pigmentation does not appear to interfere with photooxidation of bilirubin in the neonate. (6 refs.) *E. L. Rowan.*

Loyola University-Stritch School of Medicine
Chicago, Illinois 60612

846 PORTO, SERGIO O.; PILDES, ROSITA S.; & GOODMAN, HAROLD. Studies on the effect of phototherapy on neonatal hyperbilirubinemia among low-birth-weight infants. II. Protein binding capacity. *Journal of Pediatrics*, 75(6, Part I):1048-1049, 1969.

The photooxidative derivatives of bilirubin released by phototherapy did not compete with bilirubin for binding sites on albumin. In 29 low birth-weight Negro infants treated with blue fluorescent light or serving as controls, the patterns of the albumin saturation index and serum bilirubin concentrations were similar. Bilirubin was oxidized by phototherapy, but the products appeared to be nontoxic and harmless. (6 refs.) *E. L. Rowan.*

Loyola University-Stritch School of Medicine
Chicago, Illinois 60612

847 BEHRMAN, R. E. Phototherapy and hyperbilirubinemia. *Journal of Pediatrics*, 74(6):989-990, 1969. (Editorial)

Since preliminary evidence indicates that phototherapy (200 to 500+ foot-candles) may be effective in reducing the degree of hyperbilirubinemia in premature infants, the adequacy of standard nursery lighting should be re-evaluated. Until more research data has been accumulated, existing nurseries should defer changes; however, new nurseries should provide 100 foot-candles of light continuously with the capability of increasing the illumination to 200 foot-candles. (7 refs.) *A. Huffer.*

No address

848 LUCEY, JEROLD F. Nursery illumination as a factor in neonatal hyperbilirubinemia. *Pediatrics*, 44(2):155-157, 1969. (Commentary)

Lighting conditions were never considered a factor in neonatal hyperbilirubinemia until recently when light was noted to have an effect on the degree of hyperbilirubinemia. Five case studies show that intense illumination can significantly reduce hyperbilirubinemia. This therapy, while being used in the United States, is questioned by a few because of possible toxicity. No animal evidence of toxicity has occurred from photodecomposition products in excreted bile or urine material, and the danger of hyperbilirubinemia or transfusion is far worse than possible toxicity from intense illumination. (18 refs.) *E. Hays.*

University of Vermont College of Medicine
Burlington, Vermont 05401

849 LESTER, ROGER; & TROXLER, ROBERT F. New light on neonatal jaundice. *New England Journal of Medicine*, 280(14):779-780, 1969.

Light therapy in the treatment of neonatal jaundice might save the lives of infants from exposure to the dangers of an exchange transfusion. There is no concrete evidence of harmful effects from phototherapy in the clinical tests performed, but there are indications that further research is needed. (5 refs.) - *S. Half.*

No address

850 SCHUTTA, HENRY S.; & JOHNSON, LOIS. Clinical signs and morphologic abnormalities in Gunn rats treated with sulfadimethoxine. *Journal of Pediatrics*, 75(6, Part I):1070-1079, 1969.

Sulfadimethoxine (a sulfonamide) displaces bilirubin from its albumin binding sites, and in Gunn rats which have congenital nonhemolytic jaundice, this bilirubin freely diffuses into brain tissue. Thirty-five rats

were treated with a single injection of sulfadimethoxine and compared clinically and pathologically with their jaundiced but untreated, control litter mates. Treated rats showed more severe neurological symptoms and had increased bilirubin staining of their brains. Albumin binding appears to be the protective mechanism against bilirubin diffusion rather than the blood-brain barrier. Most staining was apparent in those regions of the brain with reduced blood flow and acidosis, so that anoxia may be the most important factor in the development of kernicterus. (46 refs.) - *E. L. Rowan.*

University of Pennsylvania Medical School
Philadelphia, Pennsylvania 19104

851 HARRIS, ROBERT E. Antepartum screening for ABO incompatibility. *American Journal of Obstetrics and Gynecology*, 104(7):1109, 1969.

Of 800 type O-positive mothers who were screened at 28 weeks gestation for antibody formation, only 2 had a positive Coombs test; however, their infants did not develop ABO incompatibility. Nevertheless, 6 Ss with a negative titer delivered infants with the hemolytic disease. Four of the infants had type A blood with anti-A-positive Coombs reactions (one of whom had a type O father), and 2 had anti-B-positive Coombs reactions. Only one infant required exchange transfusions. Type O-positive mothers had an incidence of ABO incompatibility of 0.8%; type O-positive mothers with type A, type B, or type AB husbands had an incidence of ABO incompatibility of 1.4%. The results demonstrate that screening O-positive mothers for ABO incompatibility is not feasible clinically or financially. (1 ref.) - *A. Huffer.*

USAF Hospital
Langley Air Force Base, Virginia 23365

852 ASCARI, W. Q.; LEVINE, P.; & POLLACK, W. Incidence of maternal Rh immunization by ABO compatible and imcompatible pregnancies. *British Medical Journal*, 1(5641): 399-401, 1969.

A total of 2,876 Rh-negative women who delivered Rh-positive infants were admitted to an Rh-immune globulin trial. In the experimental group at least 300 μg of Rh-immune globulin was administered within 72 hours after delivery. Only 0.1% of these women were actively immunized, while 7% of the controls were found to have circulating Rh antibodies 6 months postpartum. The incidence of immunization in the control group increased to 17% with a subsequent pregnancy; this is thought to represent a secondary immune response. This high incidence in ABO compatible pregnancies was not much worse than that found in ABO incompatible pregnancies, where 9-12% of group O and 17% of non-group O mothers were sensitized. Rh-immune globulin should be administered postpartum in Rh-negative mothers giving birth to Rh-positive infants regardless of ABO compatibility. (23 refs.) - *E. L. Rowan.*

Ortho Research Foundation
Raritan, New Jersey

853 ALTER, AARON A.; FELDMAN, FELIX; TWERSKY, JOSHUA; De VOS, EDWARD; PRUTTING, DAVID L.; MIOTTI, ANGELICA; & BRYAN, DAVID E. Direct antiglobulin test in ABO hemolytic disease of the newborn. *Obstetrics and Gynecology*, 33(6):846-851, 1969.

Of 4,200 eligible mothers admitted during a 13-month period, 1,473 were of blood group O, and their infants were categorized according to ABO grouping (based on the direct antiglobulin test done on umbilical cord erythrocytes) and birth weight. These infants had also had determinations made of their hemoglobin, reticulocytes, and bilirubin (cord and serum). The only positive direct antiglobulin tests were found in newborns of blood group A (32%) and of group B (22%), and these infants had significantly lower hemoglobin levels, higher reticulocyte counts, and higher bilirubin levels than those with negative tests. Ten exchange transfusions were performed on 8 infants who had a positive direct antiglobulin tests. (10 refs.) *M. G. Conant.*

Maimonides Medical Center
Brooklyn, New York 11219

854 REZAI, NASSER; & MONTAGUE, ANDREW C. W. Uneven degree of erythroblastosis in dizygotic twins. *American Journal of Obstetrics and Gynecology*, 103(8):1163, 1969.

Spectrophotometric examination of amniotic fluid may be of prognostic value in assessing the danger of erythroblastosis in a single pregnancy, but the criteria are unreliable in a twin pregnancy. A low optical density reading was obtained by examination of amniotic fluid during the thirty-fourth and thirty-eighth weeks of a dizygotic twin pregnancy. One twin was moderately affected and required 2 exchange transfusions (consistent with

prognosis based on optical density) while the other was stillborn and erythroblastotic. (2 refs.) - *E. L. Rowan.*

222 Old Line Avenue
Laurel, Maryland 20810

855 DE GEORGE, FRANCES V. An association of Rh type and gynaecological disease with twinning. *Journal of Medical Genetics*, 6(2):121-125, 1969.

The ABO and Rh blood groups and history of ovarian cysts or myoma uteri in 404 mothers of twins were compared with data from 404 control mothers of single-born infants. The ABO distribution did not differ significantly in the 2 groups, but there was an excess of Rh negative in the twin-producing mothers, especially those of blood group O. The frequencies of Rh negative were increased in multigravidae delivering either twins or singletons, although they were consistently higher in mothers of twins and especially in those of unlike-sexed pairs. The proportion of mothers with either ovarian cysts or myoma uteri increases with advancing age, but at all ages, there is a greater proportion of mothers of twins with positive histories. The results indicate that Rh-negative blood and a history of gynecological disease are maternal factors predisposing to twinning, possibly through an influence on subsequent reproductive performance, especially multiple ovulation leading to dizygous twinning. (13 refs.) *M. G. Conant.*

University of Wisconsin
Madison, Wisconsin 53706

856 RAIVIO, KARI O.; & ÖSTERLUND, KALLE. Hypoglycemia and hyperinsulinemia associated with erythroblastosis fetalis. *Pediatrics*, 43(2):217-225, 1969.

In 232 newborn infants with erythroblastosis before the age of 3 days, there were 12 cases of hypoglycemia. The blood glucose levels were examined over a 2-year period. The incidence of hypoglycemia in patients with cord hemoglobin levels <10 grams/100 ml was 17,8% compared with 1.9% of those Ss with levels > 10 grams/100 ml. There was a significant negative correlation between the blood glucose and the plasma insulin levels in the umbilical samples in 34 infants with erythroblastosis fetalis. There was a significant negative correlation between the plasma insulin levels and the cord hemoglobin concentration in 39 infants; this indicates that the degree of insulinemia seems to be directly proportional to the severity of the primary disease process. Although there are several factors affecting the regulation of blood glucose levels in severe erythroblastosis, the findings suggest that hyperinsulinemia is a mechanism for the development of hypoglycemia. There was a negative correlation between the umbilical vein plasma insulin and free fatty acids levels in 39 infants with erythroblastosis fetalis. The fact that free fatty acids and bilirubin are transported in the circulation in an albumin-bound form suggests that hyperinsulinemia in association with severe erythroblastosis increases the bilirubin-binding capacity of serum by depressing the free fatty acids levels. (20 refs.) - *F. J. McNulty.*

Children's Hospital
Helsinki 29, Finland

857 WRANNE, LARS. Studies on erythro-kinetics in infancy: XIV. The relation between anaemia and haemoglobin catabolism in Rh-haemolytic disease of the newborn. *Acta Paediatrica Scandinavica*, 58(1):49-53, 1969.

Nine infants with Rh-hemolytic disease had the hemoglobin catabolism determined by a recently developed technique (carbon monoxide [CO] analyses); the findings indicated there was no correlation between the CO formation and the hemoglobin concentration of the newborn and confirms the clinical observation that the hemoglobin concentration in not always a reliable index of the rate of hemolysis. There was also no correlation between the CO formation and the concentration of bilirubin in cord blood. The rate of bilirubin increase showed a correlation to the CO formation. The calculated daily hemolysis average was 430 mg hemoglobin/kg body weight compared with 185 mg/kg for the normal. Apparently, anemia and high rates of hemoglobin destruction are not necessarily parallel phenomena. (15 refs.) - *F. J. McNulty.*

University Hospital
Uppsala, Sweden

858 PEETERS, L. A. M.; & van BEMMEL, J. H. Fetal hypodynamic cardiac insufficiency in erythroblastosis fetalis. *American Journal of Obstetrics and Gynecology*, 104(6):883-888, 1969.

A comparison of simultaneously recorded fetal electrocardiograms and phonocardiograms revealed evidence that fetal heart contraction was impaired in severe erythroblastosis fetalis. Recordings were made in 4 women whose

infants were normal at delivery and in 3 women who delivered hydropic infants. In erythroblastosis, the duration of fetal general systole (phase of ventricular contraction) was shortened although the heart rate was within the normal range. The contractile properties of fetal ventricular muscle fibers are, therefore, deteriorated. A similar picture is found in hypodynamic cardiac insufficiency secondary to metabolic disorders in adults. (8 refs.) - *E. L. Rowan.*

St. Radboud Hospital
Nijmegen, The Netherlands

859 LOWES, B. C. R. Hemolytic disease of the newborn due to anti-Rh14 (Rh^B). *Vox Sanguinis*, 3(16):231-232, 1969.

A Negro newborn male (who had a positive direct antiglobulin test, a hematrocrit of 51%, and a bilirubin of 9 mg%) was treated successfully with 2 exchange transfusions of Rh-negative blood for hemolytic disease due to anti-Rh14. His red cells were grouped as A, Rh:1,-2,-3,4,5. The blood type of the 25-year-old mother was A, Rh:1,2,-3,4,5,-13,-14, 15,-16($Rh_1^{abd}rh$). Her antibody, anti-Rh14 (anti-Rh^B), reacted with the cells of her other children, husband, and mother. (5 refs.) - *A. Huffer.*

North American Biologicals
Fort Lauderdale, Florida 33301

860 HOPKINS, D. F. Rhesus phenotypes and Rh(D) haemolytic disease of the newborn. *Vox Sanguinis*, 16(3):195-199, 1969.

A survey of rhesus phenotypes of parents and infants of 1,639 families in which the mothers were immunized to Rh(D) by pregnancy indicated that the genotype of an Rh(D) positive live-born infant did not affect the severity of the hemolytic disease. Of 573 affected infants, 148 were born of fathers with probable R_1R_2 genotype. Of these infants, 72 were R_1r and 76 were R_2r genotypes. Thus, R_1 sperms do not appear to have a higher performance than do R_2 sperms. However, the stillborn rate was significantly higher when the father's genotype was R_2r or R_1R_2 than when it was R_1R_1 or R_1r. (6 refs.) *L. S. Ho.*

Law Hospital
Carluke, Lanarkshire, Scotland

861 WADE, MACLYN E.; OGDEN, JOHN A.; & DAVID, CLARENCE D. Criteria for intrauterine fetal transfusion. *Obstetrics and Gynecology*, 34(2):156-160, 1969.

The results of 124 fetal transfusions in 58 pregnancies are compared with a national cooperative study for the purpose of refining criteria for intrauterine fetal transfusions. The basic criterion for a transfusion was an optical density difference of the amniotic fluid at 450 mμ that rapidly rose into the upper quarter of zone II or zone III on a modified Liley curve. The overall survival rate was 34.5% with a survival rate of 23% when transfusion was initiated before 30 weeks of gestation and 71% when initiated after 30 weeks. Of the surviving infants, 16% were transfused between 20 and 24 weeks of gestation which contrasted to the national study in which only 10% of the successful cases were begun this early. A routine amniocentesis at 20 weeks would improve the survival rate for these seriously affected fetuses. The presence of ascites and/or hydrops was a poor prognostic sign, for only one in 17 infants survived. On the other hand, transfusion after premature rupture of the membrane did not adversely affect one infant, while in 3 cases in which transfusion was withheld, the fetus deteriorated and died. Based on these results, amniocentesis should begin between 20 and 25 weeks gestation with a willingness to transfuse if the optical density difference readings fall into zone III on 2 separate occasions. Transfusion should be withheld if ascites or hydrops is present. Beyond 26 weeks, the same criteria should be used and transfusion continued every 2-3 weeks until the fetus is large enough to survive delivery. (4 refs.) - *W. Klein.*

Yale Medical School
New Haven, Connecticut 06510

862 Hazards and dangers of exchange transfusion. *Canadian Medical Association Journal*, 100(21):1009-1010, 1969. (Editorial)

Exchange transfusion of the newborn is extremely valuable in the treatment of erythroblastotic and non-erythroblastotic causes of neonatal jaundice and accidental intoxications; however, it is also associated with significant morbidity and mortality. Delayed complications include serum hepatitis and hepatic cirrhosis. Immediate complications may be ascribed to the technique and/or the blood. Poor technique may result in air embolism, sepsis, overloading, splenic rupture, perforation of a vein, or cardiac arrhythmia.

Blood matching errors, citrate toxicity, hyperkalemia, and defibrination may be attributed to the transfused blood. Bowel perforation has recently been observed following exchange transfusion. Because of these inherent dangers, the technique should be restricted to large centers with experienced personnel. (18 refs.) - *E. L. Rowan.*

863 QUEENAN, JOHN T. Intrauterine transfusion: A cooperative study. *American Journal of Obstetrics and Gynecology*, 104(3): 397-405, 1969.

Data from 15 medical centers on 1,097 intrauterine transfusions performed on 607 sensitized, Rh-negative obstetric patients were compiled and evaluated. There were 206 (34%) infants salvaged by intrauterine transfusion, including 203 surviving by the closed method and 3 by the open (hysterotomy) method. Transfusion after 25 weeks gestation produced the greatest survival rate with a maximum at 30-32 weeks gestation, while the survival rate was only 9% when the transfusion was performed prior to 25 weeks. Of the 206 fetuses salvaged, 92% received their initial transfusion after 25 weeks. The complications most frequently associated with intrauterine transfusions were premature labor (30%) and premature rupture of the membranes (12%). Investigators with the lowest criteria for intrauterine transfusion had the highest survival rates. (8 refs.) - *M. G. Conant.*

1 Perryridge Road
Greenwich, Connecticut 06830

864 MANDELBAUM, BERNARD. Fetal transfusions. *International Journal of Gynaecology and Obstetrics*, 7(2):71-84, 1969.

A total of 330 consecutive prenatal transfusions were performed in 142 pregnancies in which the fetal prognosis was judged to be hopeless without intervention. The transfusions were begun as early as 20 weeks of gestation, and if required, they were followed by a second and third transfusion given one and 3 weeks later. Although there were 85 fetal and 21 neonatal deaths following prenatal transfusion, 36 (25.4%) survived. There were no survivors among the 59 fetuses with hydrops, even though 11 were born alive. Serial maternal urinary estriol excretion rates correlated well with the fetal outcome. The results suggest that intrauterine transfusions probably increase the chance of survival of the severely erythroblastotic fetus, but that once hydrops has occurred, attempts at transfusion are not justified. (14 refs.) *M. G. Conant.*

Wayne State University School of Medicine
Detroit, Michigan 48201

865 BOWMAN, JOHN M.; FRIESEN, RHINEHART F.; BOWMAN, WILLIAM D.; McINNIS, A. CAMPBELL; BARNES, PHILIP H.; & GREWAR, DAVID. Fetal transfusion in severe Rh isoimmunization. *Journal of the American Medical Association*, 207(6):1101-1106, 1969.

Over a 55-month period, intrauterine transfusions (218) were performed on 100 fetuses with severe Rh isoimmunization; an increased salvage rate over the last 33 months attested to improved technique and experience. Only 28% of transfused fetuses survived in the first period, but during the second period, 62% of the group survived; in addition, the risk of traumatic fetal death from transfusion was reduced from 19% to 6.4%. Amniocentesis was begun at 20 to 22 weeks of gestation and repeated frequently in order to monitor the optical density of the amniotic fluid. Transfusions, when indicated, were kept within the range of 40 ml at 23 weeks to 100 ml at 30 weeks gestation. Transfusions were spaced to keep the donor hemoglobin concentration at 10 gm/100 ml. Delivery was induced at about 34 weeks. Improved technique has resulted in survival of 6 of 19 infants with hydrops *in utero*. Of 39 survivors of the procedure over 6 months of age, only one appears to be MR. A highly skilled fetal transfusion team can reduce infant mortality significantly if women with severe Rh isoimmunization are referred early in pregnancy. (15 refs.) - *E. L. Rowan.*

University of Manitoba
Winnipeg 3, Manitoba, Canada

866 GREGG, GRACE S.; & HUTCHINSON, DONALD L. Developmental characteristics of infants surviving fetal transfusion. *Journal of the American Medical Association*, 209(7): 1059-1062, 1969.

Fifteen children who had received intrauterine transfusions and were subjected to great prenatal stress were found to be developing normally when examined between 9 and 38 months of age. One child who showed growth retardation functioned in the dull-normal range of intelligence; 4 other children had minor neurological abnormalities. All these children lived in intact families and were

highly valued by their mothers. This favorable environment might be expected to compensate for the minimal deficiencies present as a result of earlier stress. (18 refs.) *E. L. Rowan.*

125 DeSoto Street
Pittsburgh, Pennsylvania 15213

867 PANAGOPOULOS, G.; VALAES, T.; & DOXIADIS, S. A. Morbidity and mortality related to exchange transfusion. *Journal of Pediatrics*, 74(2):247-254, 1969.

A total of 606 exchange transfusions were performed on 502 Greek infants who had serum bilirubin levels greater than 25 mg/100 ml. This series is unusual in that 53 infants had Rh incompatibility, 120 had ABO incompatability, and 65 were premature. The others had neither incompatability nor were premature (99 had glucose-6-phosphate dehydrogenase deficiency) and were vigorous at the time of transfusion. The umbilical vein was catheterized on all but 4 occasions, and blood was allowed to flow by gravity during the procedure. Only 15 transfusions had to be stopped because of clinical or technical complications. Four episodes of intestinal bleeding occurred later. Nineteen percent required repeat transfusions. Four infants died within 6 hours of transfusion and 14 died after this period. The latter group included kernicterus (10), septicemia (3), and meningitis (1). The mortality rate of only 1.4% indicates that this procedure is a simple, safe, and effective method of prevention of kernicterus, the risk of which was estimated to be 12.8% in this series. (14 refs.) *E. L. Rowan.*

Aghia Sophia Children's Hospital
Athens 608, Greece

868 MAGUIRE, HERBERT; KRETZSCHMAR, GUNTER; & *WALLGREN, GORAN. The acid-base and electrolyte pattern in the erythroblastotic infant and its relationship to various parameters during exchange transfusion. *Acta Paediatrica Scandinavica*, 58(5):491-496, 1969.

Exchange transfusions, which used acid-citrate-dextrose blood, administered to 34 cases of hyperbilirubinemia and 3 anticipated cases, significantly decreased the blood pH, the bicarbonate level, and the potassium level in hyperbilirubinemic newborn infants. Acidosis and standard bicarbonate correlated significantly with the rate of transfusion, while the decrease of potassium and bilirubin correlated with the volume of exchange transfusion. Calcium, sodium, and phosphate changes were inconsistent. The preoperative values of pH and bicarbonate recovered completely after 20 minutes. Alkalotic overshoot was observed in some cases. The potassium level continued to decrease during the recovery period. Susceptibility to induced changes was not increased in low-weight infants. Exchange infusions were most effective in the beginning of the procedure, because more infant blood was exchanged against donor blood per stroke. The net addition of acid-citrate-dextrose blood gradually decreased as the transfusion proceeded. A steady state with respect to net addition of citrate and to metabolic breakdown and acid excretion was reached during the latter part of the transfusion procedure. (27 refs.) - *L. S. Ho.*

*Karolinska Sjukhuset
Stockholm 60, Sweden

869 CAMPBELL, COLIN; JAFFE, ROBERT B.; & WORK, BRUCE A. Statistical standardization of amniocentesis data in erythroblastosis fetalis. *American Journal of Obstetrics and Gynecology*, 104(4):556-559, 1969.

The optical densities of 73 amniotic fluid samples from pregnancies in which the babies required exchange transfusion (Group 2) and of 79 amniotic fluid specimens from pregnancies in which exchange transfusion was not necessary (Group 1) were determined. The difference between the actual optical density at 450 mμ and that calculated from the values at 550 and 365 mμ was plotted against weeks of pregnancy. In both groups, the optical density difference declined as pregnancy progressed, with Group 2 values declining more rapidly than Group 1 values. Amniotic fluid analysis is, thus, less reliable in later pregnancy. The probability of a given value belonging to either group can be calculated by comparing the areas of the normal probability curve which this value demarcated for each group. (2 refs.) - *M. G. Conant.*

University of Michigan Medical Center
Ann Arbor, Michigan 48104

870 SCHULMAN, HAROLD. Significance of amniotic fluid analysis in Rh sensitization. *Obstetrics and Gynecology*, 34(2): 151-155, 1969.

The relation between Δ optical density (OD) of the amniotic fluid, cord hemoglobin concentration, and cord bilirubin concentration

is reviewed in 209 Rh-sensitive women, and a method of pregnancy management based on the amniocentesis results is proposed. The Δ 450 mμ OD values at 28-34 weeks of gestation correlated 0.83 with cord hemoglobin concentrations at birth. When cord hemoglobin was compared with cord bilirubin, the correlation coefficient was 0.71. At 28-34 weeks of gestation, the management program included delivery at term for those with ΔOD peaks (at 450 mμ) <0.025, delivery at 37-40 weeks for those with original OD peaks between 0.026-0.10 and lower subsequent values, delivery at 34-37 weeks of gestation for those with OD peaks between 0.11 and 0.24, and immediate delivery or intrauterine transfusion for those with OD peaks >0.25. Clinical results with the patient population support the applicability of these guidelines. (12 refs.) *W. Klein.*

Albert Einstein College of Medicine
Bronx, New York 10461

871 GUSDON, JOHN P.; LEAKE, NORMAN H.; & OLIVER, KENNETH L. Amniotic fluid analysis in erythroblastosis secondary to Kell immunization: Report of a case. *Obstetrics and Gynecology*, 33(3):432-434, 1969.

Two consecutive spectrophotometric determinations of the amniotic fluid during the thirty-third and thirty-fourth weeks of gestation in a 30-year-old woman with anti-Kell antibody in the amniotic fluid clearly showed a case of fetal erythroblastosis secondary to Kell immunization. A male infant was delivered immediately by cesarean section but died during the exchange transfusion. Although the patient was not seen early enough to initiate active treatment, the spectrophotometric method appears to be very useful in assessing fetal status. (16 refs.) - *L. S. Ho.*

Bowman Gray School of Medicine
Winston-Salem, North Carolina 27103

872 BRAZIE, J. V.; BOWES, W. A., JR.; & IBBOTT, F. A. An improved, rapid procedure for the determination of amniotic fluid bilirubin and its use in the prediction of the course of Rh-sensitized pregnancies. *American Journal of Obstetrics & Gynecology*, 104(1):80-86, 1969.

To determine the bilirubin level in amniotic fluid, unconjugated bilirubin from amniotic fluid was extracted into chloroform, the absorbance of this solution at a wavelength of 453 mμ was determined, and the value was compared to a calibration curve. The results correlated with those obtained by the use of Liley's method (r=0.97), and there was no interference due to excessive amounts of heme pigments, meconium, and turbidity. Retrospective analysis of 276 amniotic fluid specimens from 137 pregnancies showed that the range of bilirubin concentrations gradually increased with increasing severity of disease in the newborn, although there was considerable overlap between the 4 differentiated groups. The predictions were accurate in 86% of the patients. (28 refs.) - *M. G. Conant.*

University of Colorado Medical Center
Denver, Colorado 80220

873 JONES, PETER. Assessment of size of small volume foeto-maternal bleeds: A new method of quantification of the Kleihauer technique. *British Medical Journal*, 2(5649): 85-88, 1969.

Rh-isoimmunization probably results from the formation of antibodies to fetal cells in maternal circulation. Kleihauer described a technique whereby adult (but not fetal) hemoglobin could be denatured and the ratio of fetal to adult cells in maternal circulation could be estimated. This technique suffers from variable methods of counting and the non-random distribution of the larger fetal erythrocytes on a blood film. A technique is described in which a measured amount of maternal blood is put on a slide by a mechanical spreader. All fetal cells are counted and corrected to a dilution by reference to a standard graph. This method is not only more accurate than prevailing techniques but may also be automated for screening programs. (7 refs.) - *E. L. Rowan.*

Royal Victoria Infirmary
Newcastle upon Tyne, England

Trauma or physical agents

874 WINDLE, WILLIAM F. Brain damage by asphyxia at birth. *Scientific American*, 221(4):76-84, 1969.

Neuropathological and clinical followup of Rhesus monkeys subjected to neonatal asphyxia sufficient to require resuscitation has demonstrated that such asphyxia causes permanent brain damage. Pathologically, there is a loss of nerve cells in the thalamus, inferior colliculus, and other areas of the brain stem. Such damage is demonstrated in all asphyxiated animals even though they may appear to recover the neurological function which is obviously deficient during the first few weeks of life. Clinical damage was always demonstrable as impaired learning. Experimental asphyxia has been shown to cause, and not result from, pulmonary dysfunction and kernicterus. Although children subjected to asphyxia neonatorum may appear to "grow out" of their abnormalities, it is likely that permanent damage similar to that found in monkeys would be found on neuropathological examination and that more effort must be made to prevent neonatal asphyxia. (No refs.) *E. L. Rowan.*

No address

875 TOWBIN, ABRAHAM. Latent spinal cord and brain stem injury in newborn infants. *Developmental Medicine and Child Neurology*, 11(1):54-68, 1969.

The incidence of spinal cord and brain stem injuries at birth appears to be greater than is usually thought; however, such injuries often remain undetected. Diagnostic criteria include respiratory depression in the neonate. Those infants who survive may have severe nervous system defects, and secondary hypoxic damage may result in CP, MR, or other CNS defects. Analysis of 170 cases showed 16 with extensive spinal cord injury of a traumatic nature and 14 other infants with less severe lesions. Laceration and hemorrhage of the cord and brain stem may occur as well as damage to the spinal and cranial nerve roots, dura, and neighboring structures. Spinal epidural hemorrhage is often found. The major contributing factor to injuries of this type is excessive axial traction. Other variables which may be related are prematurity, primiparity, poor position of the fetus, dystocia, and precipitous delivery. More than 10% of neonatal cases autopsied in this study had some evidence of spinal or brain stem injury. (38 refs.) - *B. Bradley.*

Harvard Medical School
Boston, Massachusetts 02125

876 ROBERTON, N. R. C. Effect of acute hypoxia on blood pressure and electroencephalogram of newborn babies. *Archives of Disease in Childhood*, 44(238):719-725, 1969.

To investigate the relative importance of hypotension and hypoxemia in causing cerebral hypoxia in newborns with respiratory distress syndrome, arterial oxygen pressures (P_aO_2), blood pressures, and EEGs were recorded simultaneously, and it was found that EEG slowing was associated consistently with a fall in P_aO_2. Nine infants were studied who were being artificially ventilated with positive pressure because of the severity of their illnesses. While on the ventilator, all had normal blood gas pressures, blood pressures, and EEG patterns. Periodic attempts to wean the infants off the ventilators were made, but all (14 attempts) failed because of apnea or inadequate respiration. In each case, the P_aO_2 rapidly fell to levels less than 40 mg Hg, and the EEGs slowed in activity and in a few cases became virtually flat. Changes were reversed when the ventilator was re-employed. During the period of the EEG changes, there was no consistent change in the blood pressure. It is suggested that low P_aO_2 is the critical factor in causing cerebral hypoxia and must be maintained within normal limits to guard against brain damage. (27 refs.) - *W. Klein.*

Hammersmith Hospital
London W.12, England

877 BEHRMAN, R. E.; JAMES, L. S.; KLAUS, M.; NELSON, N.; & OLIVER, T. Treatment of the asphyxiated newborn infant: Current opinions and practices as expressed by a panel. *Journal of Pediatrics*, 74(6):981-988, 1969.

Panel participants were asked to comment on the case history of a newborn infant who sustained simple intrauterine asphyxia due to placental or cord complications; their comments were summarized into guidelines for resuscitation. The upper airway should be cleared, ventilation should be established with oxygen by positive pressure, closed chest cardiac massage should be started if the heart rate does not increase. If there is no clear improvement, a solution of sodium bicarbonate and glucose should be administered through an umbilical vein or artery. Subsequently recommended measures include administration of epinephrine and intravenous administration of glucose. Heat loss and oxygen consumption should be minimized. The importance of anticipating the problem prior to delivery is emphasized. (12 refs.) *M. G. Conant.*

878 COCKBURN, F.; DANIEL, S. S.; DAWES, G. S.; JAMES, L. S.; MYERS, R. E.; NEIMANN, W.; RODRIGUEZ DE CURET, H.; & ROSS, B. B. The effect of pentobarbital anesthesia on resuscitation and brain damage in fetal rhesus monkeys asphyxiated on delivery. *Journal of Pediatrics*, 75(2):281-291, 1969.

General anesthesia with pentobarbital when compared with local anesthesia in pregnant monkeys before delivery reduced the rate of acid accumulation during asphyxia in newborns, increased the duration of primary apnea and gasping, accelerated the establishment of rhythmic breathing on resuscitation, and reduced brain damage. The monkeys were delivered by cesarean section, were immediately prevented from breathing by slipping a rubber bag containing a small quantity of 0.9% saline over the head, and were asphyxiated by clamping the umbilical cord. Resuscitation began after 12.5-15 minutes of asphyxia. The decrease of pH, the rise of PCO_2, and the rise of blood lactate were significantly less in anesthetized than in unanesthetized monkeys. The time of gasping after asphyxia was 9.82 minutes and 8.22 minutes in anesthetized and unanesthetized monkeys. Four of the 7 asphyxiated unanesthetized monkeys had severe and extensive damages in the nuclei of inferior colliculus and brainstem nuclei; whereas, 4 of the 13 monkeys delivered under pentobarbital anesthesia had no brain damage and in the remainder, the damage was much less severe. (22 refs.) - *L. S. Ho.*

Nuffield Institute for Medical Research
Oxford, England

879 TOWBIN, ABRAHAM. Nervous-system damage related to hyaline-membrane disease. *Lancet*, 1(7600):890, 1969. (Letter)

Newborn infants with brain stem and spinal cord damage frequently develop hyaline-membrane disease. The pathological lesions include traumatic damage to the brain stem and upper spinal cord during the descent and extraction of the fetus and infarctional damage of the upper brain stem structures. (3 refs.) *A. Huffer.*

Danvers State Hospital
Hathorne, Massachusetts

880 DAVIS, J. A.; PAYNE, W. W.; STEVENS, J.; & YU, J. Some metabolic aspects of the ill premature infant with the respiratory distress syndrome. *Helvetica Paediatrica Acta*, 24(6):609-632, 1969.

The changes in the serial values of pH, pCO_2, bicarbonate, sodium, potassium, chloride, calcium, magnesium, phosphate, glucose, urea, lactic acid, pentose, and plasma proteins were measured in 25 infants (including both well, premature infants and recovered and fatal cases of respiratory distress syndrome) who were divided into 3 groups on the basis of birth-weight (less than 1,500 g, 1,500-2,500 g but below the twenty-fifth percentile for gestational age, and expected weight for dates). The chemical patterns observed are thought to be related to birth asphyxia, intrauterine and postnatal malnutrition, and cardiorespiratory failure with shock, as well as to immaturity. Hypoxia is thought to be the main factor, causing a rise in the potassium level and a rise in blood urea (attributed to protein breakdown with loss of cell substance). Inadequate tissue oxygenation is the probable cause of death in the respiratory distress syndrome and is due to a combination of impaired ventilation, shunting of blood past alveoli, and forward circulation failure. (21 refs.) - *M. G. Conant.*

Hammersmith Hospital
London, W.12, England

881 HARDIE, GWENDOLINE; & *KENCH, J. E. Anti-IgG agglutinins in idiopathic distress syndrome of the newborn. *Archives of Disease in Childhood*, 44(238):747-756, 1969.

Sera were collected from mothers of 35 healthy premature infants, from 11 infants with the idiopathic respiratory distress syndrome (IRDS) confirmed by chest X-ray, and from 17 infants diagnosed as having respiratory distress but without radiological confirmation. The sera were used to prepare sensitized sheep red blood cells which were titrated against serial doubling dilutions of the infants' sera. Similar titrations were performed using cells sensitized with Bence-Jones proteins or with a papain digest of IgG, and in each case, concentrations of total serum proteins, IgG, and IgM were determined. Sera of all infants with radiologically confirmed IRDS contained agglutinins against their mothers' IgG, while only 8 of the 35 normal infants had similar agglutinins. Both healthy, premature infants and those with IRDS had similar titers of serum agglutinins against papain-digested IgG and against Bence-Jones proteins, while infants with IRDS had significantly lower concentrations of total serum proteins and of IgG than healthy infants of the same gestational age. (21 refs.) - *M. G. Conant.*

*Medical School, University of Cape Town
Cape Town, South Africa

882 SWISCHUK, LEONARD E. Spine and spinal cord trauma in the battered child syndrome. *Radiology*, 92(4):733-738, 1969.

Although spinal injury is not as common as long bone or skull trauma in battered children, this may be a function of its lack of symptoms rather than its frequency. Radiographic examination of children suspected of being battered disclosed 7 with spinal fractures. In 4 cases there was intervertebral disk-space narrowing and anterior vertebral notching at the thoracolumbar junction. Two children had simple vertebral body compression fractures and one a fracture dislocation of the cervical spine. Excessive hyperflexion of the spine is the most likely mechanism of such injury. Spinal fractures are frequently asymptomatic so that the detection of the lesion rests with the radiologist. (8 refs.) - *E. L. Rowan.*

University of Oklahoma Medical Center
Oklahoma City, Oklahoma 73104

883 BLENCOWE, SUSAN M., ed. *Cerebral Palsy and the Young Child*. London, England, E. & S. Livingstone, 1969, 154 p. $6.75.

This symposium from the Center for Spastic Children, Cheyne Walk (England) focuses upon the etiology of cerebral palsy (CP) as well as its therapeutic, social and educational aspects. Children with CP may have eye defects, epilepsy, speech, and hearing defects as well as MR (over 3/4 of all cases of CP have IQs below about 75). In athetosis, where the damage is limited to the basal ganglia only, the intelligence may be normal or higher. Two primary groups of disorders in CP children are motor disorders and associated disorders. About 30% of children with athetoid CP have hearing losses. The most usual diagnostic sign of eye defects is squinting which occurs 8 time more often than in the normal population. About 75% of these children have speech and language problems. The treatment of CP depends upon the needs of the individual child. Assessment procedures involve the employment of the Ruth Griffiths Mental Development Scale and other tests at older age levels such as the Stanford-Binet Scale. A history of the Cheyne Walk Center indicates that more than 700 children have been involved in some procedures at the Center either in assessment or training or special care. This book should be of interest to all professional workers and parents. (15 refs.) - *B. Bradley.*

CONTENTS: What is Cerebral Palsy?; The Causes; Physical Aspects; Associated Disorders; Hearing Loss and Cerebral Palsy; Assessment of Vision in Young Children with Cerebral Palsy; Physiotherapy; Occupational Therapy; Speech Therapy; Psychological Aspects; The Educational Needs of the Young Cerebral Palsied Child; Special Care and Assessment Unit; Social Care; Special Equipment.

884 KAFKA, HANS; HIBBARD, LESTER T.; & SPEARS, ROBERT L. Perinatal mortality associated with cesarean section. *American Journal of Obstetrics and Gynecology*, 105(4): 589-596, 1969.

Studies were made of 644 cesarean section cases, and neonatal morbidity and mortality were evaluated in terms of birth-weight, gestational age, and obstetrical complications. Of 637 live-born infants, 86 had evidence of morbidity and recovered while 25 died within 28 days. One hundred and thirty infants were premature by weight (2,500 g or less), and 143 were premature by gestational age (37 wks or less). The cesarean sections were classified as low risk (cephalopelvic disproportion

or repeat section); there were 455 births in this category, and there were 5 stillbirths and 7 neonatal deaths. Of 200 high risk births (malpresentation, failed induction, placenta previa, abruptio placentae, prolapsed cord, fetal distress, or other obstetric complications), 13 were stillborn and 18 died neonatally. The most common cause of death was hyaline membrane disease (7 of 9 were premature) and other respiratory diseases. Four infants died of intracranial hemorrhage, one was hydropic from Rh sensitization, and one died from meningitis and meningocele. One-half of the stillborn infants died from antepartum obstetrical hemorrhage. If the Apgar score was 3 or less, an increase in neonatal mortality occurred; however, some infants whose mothers were diabetic had scores of 5 or more and died. Apgar scores were low in full-term cesarean section compared with normal delivery and showed fetal depression even in optimal circumstances. Much of the morbidity and mortality of cesarean section was associated with increasing age and parity, and these patients should receive more intensive obstetrical care. (18 refs.) - *E. Hays*.

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885 GERBER, JOHN H.; CHOITHANI, HANSA; & O'LEARY, JAMES A. Cesarean section for the second twin. *Obstetrics and Gynecology*, 33(6):770-771, 1969.

Abdominal delivery of a second twin is indicated for the same reasons as in single pregnancies--fetal distress, cord prolapse, premature separation of the placenta, cephalopelvic disproportion, persistent oblique or transverse lie, and failed version and extraction. In addition, cesarean section may be indicated for situations unique to multiple pregnancies--fetal entanglement, interlocking, and the trapped second twin. A case report in which the second twin was successfully delivered by cesarean section using anesthesia with halothane following attempted version and extraction is reported. (4 refs.) *M. G. Conant*.

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886 FRIEDMAN, EMANUEL A.; NISWANDER, KENNETH R.; SACHTLEBEN, MARLENE R.; & NAFTALY, NORMA. Dysfunctional labor. X. Immediate results to infant. *Obstetrics and Gynecology*, 33(6):776-784, 1969.

Mortality and incidence of low Apgar scores at 1 and 5 minutes of age were investigated in 1,194 infants from an equal number of labors, which were divided by clinical diagnosis into the 5 categories of normal labor lasting less than 20 hours, normal labor lasting more than 20 hours, uterine dysfunction, maternal dystocia, and combined uterine dysfunction and maternal dystocia and also subdivided according to graphic pattern of progressive cervical dilatation and descent for nulliparas and multiparas. The data confirmed previously reported contentions that mortality is high in prolonged labor and that maternal dystocia and not uterine dysfunction is associated with increased perinatal wastage. Mortality rates were consistently higher among infants born after documented graphic abnormality. Apgar score data confirmed these mortality trends and verified the value of graphic technique of labor diagnosis as a prognostic index. (10 refs.) *M. G. Conant*.

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887 FRIEDMAN, EMANUEL A.; NISWANDER, KENNETH R.; & SACHTLEBEN, MARLENE R. Dysfunctional labor. XI. Neurologic and developmental effects on surviving infants. *Obstetrics and Gynecology*, 33(6):785-791, 1969.

Psychological and neurological examinations were performed at age 8 months on 913 infants and at age one year on 1,020 infants whose mothers were studied during pregnancy, labor, and puerperium. Differences in Bayley mental and motor scores were negligible with regard to clinical labor diagnoses, cervimetric patterns, and analysis of variance. Trends suggested a relatively greater incidence of abnormal motor scores at age 8 months in clinically dysfunctional and dystocic labors, especially those confirmed to be dysfunctional by graphic analysis of progressive cervical dilatation and descent. Dysfunctional graphic patterns were also associated with a higher incidence of psychologic abnormality at age 8 months regardless of the clinical diagnosis of labor. Neurological findings at one year of age were similar to the other findings. (19 refs.) - *M. G. Conant*.

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Disease or disorders of metabolism, growth, or nutrition

888 INTERDISCIPLINARY SOCIETY OF BIOLOGICAL PSYCHIATRY. *Brain Damage by Inborn Errors of Metabolism*. (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, 126 p. $3.75.

Although brain damage can have a variety of etiological agents, it is often one of the sequels of inborn metabolic errors, and in order to treat such a disorder, it must first be suspected; therefore, diagnosis should be made early in life and immediate treatment instituted if feasible. Since the diagnosis of these inborn metabolic errors is often a major problem, new techniques and screening programs need to be developed. Some inborn errors which can be treated are phenylketonuria, maple syrup urine disease, and galactosemia. In addition to the medical aspects of treatment, the psychological aspects need to be considered also. The classical concepts in the pathology of these disorders may need to be reconsidered; it is possible that the permanent damage is due to abnormal metabolism distal to the block, rather than excessive accumulation of metabolites proximal to the block. (138 refs.) - *M. D. Nutt.*

CONTENTS: Chairman's Introductory Remarks (Van Praag); Hereditary Disorders in the Amino-acid Metabolism which Cause Disorders in the Central Nervous System (Jonxis); Inborn Errors of Metabolism of the Thyroid Gland (Tegelaers); Inborn Errors of Amino Acid Metabolism: Chemical Aspects of Diagnosis and Control of Treatment. Suggestions for a General Analytical Approach (Wadman); Organizing Screening Programme for Inborn Metabolic Errors in The Netherlands (Fleury); The Pathogenesis of Inborn Errors of Amino Acid Metabolism: Are Classical Concepts Adequate? (Gaull); Neurological Examination of the Young Infant (Prechtl); Inborn Errors of Metabolism Associated with Brain Damage. Early Detection and Prevention of their Manifestations (Bickel); Psychological Considerations in the Treatment of Inborn Errors of Metabolism (Cowie).

889 JONXIS, J. H. P. Hereditary disorders in the amino-acid metabolism which cause disorders in the central nervous system. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage in Inborn Errors of Metabolism*. (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 9-22.

It has been known for many years that inborn errors of amino acid metabolism can cause grave damage to the central nervous system; the classical example is phenylkentonuria (PKU). The cooperation of pediatricians, psychologists, psychiatrists, and neurologists is of utmost importance in diagnosing and treating this group of patients. Children with inborn metabolic errors often are born with no obvious signs of cerebral damage; later clinical signs (from the first few days after birth through the first year) of failure-to-thrive, MR, or increasing morbidity and death eventually lead to the diagnosis, but by this time, severe damage may be irreversible. The pathological symptoms are often aggravated by dietary intake of protein. Amino acid disorders are subdivided into 2 groups; the first group involves the metabolism of lysine, citrulline, and argininosuccinic acid, while the other group consists of most of the important disorders associated with MR, growth retardation, and other abnormalities. Inborn metabolic errors which have been more or less successfully treated

by diet are PKU, maple syrup urine disease, isovalerianacidemia, hypervalinemia, homocystinuria, histidinemia, tyrosinosis, hyperglycinemia (both forms), hyperlysinemia, citrullinemia, and some disorders in the urea cycle. (No refs.) - *M. D. Nutt.*

890 WADMAN, S. K. Inborn errors of amino acid metabolism: Chemical aspects of diagnosis and control of treatment. Suggestions for a general analytical approach. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage in Inborn Errors of Metabolism.* (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 48-59.

The increase in diagnosed cases of inborn error of amino acid metabolism is due to the widespread application of chromatography and electrophoresis. Some inborn disorders of amino acid metabolism with symptoms in early infancy are phenylketonuria, maple syrup urine disease, hypervalinemia, isovalericacidemia, hyperglycinemia, hyperlysinemia, ornithine transcarbamylase deficiency, and sulfite oxidase deficiency. In interpreting the biochemical abnormalities, consideration must be given to these facts: different enzyme defects can cause accumulation of the same metabolite; enzyme defects may be total or partial; enzymes may be absent in some tissues, but present in others; enzyme defects may be more or less compensated by metabolic processes; and enzyme defects may be permanent or transient. Three levels of chemical analysis suggested for nationwide screening are: chemical analysis of extreme simplicity performed on a wide scale; more complicated chemical analysis; and special analysis requiring knowledge of the particular biochemical field. This analytical organization would function on 3 levels corresponding to the 3 categories: a peripheral local apparatus; local centers with special equipment and trained physicians; and university research centers. (24 refs.) *A. J. del Rosario.*

891 GAULL, GERALD. The pathogenesis of inborn errors of amino acid metabolism: Are classical concepts adequate? In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism.* (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 67-76.

The present treatment of inborn errors of metabolism is based on the hypothesis that compounds proximal to a defective enzyme accumulate to "toxic" concentrations, while distal to the block, there may be a relative deficiency which is not physiologically significant because of its free availability in the diet. In recent years, this hypothesis has become accepted as virtually self-evident; however, this concept is not adequate and can no longer explain many aspects of these disorders. In phenylketonuria and homocystinuria, there is no correlation between the blood phenylalanine, methionine, and homocystine concentration and the degree of MR. If proximal accumulation alone is not sufficient to reproduce the disease, we probably should look on the distal, more neglected side of the block. The emphasis on proximal accumulations to the exclusion of distal deficiency rests on 3 implicit assumptions: where they have been measured, concentrations of distal metabolites in plasma and tissues have been found to be normal or only slightly reduced; these patients seem to grow reasonably well; and these compounds are freely available in the diet and thus could not be physiologically rate-limiting. Perhaps consideration should also be given to the possibility that abnormal turnover of distal metabolites may be crucial in the pathogenesis of inborn metabolic errors. (5 refs.) - *A. J. del Rosario*

892 BICKEL, HORST. Inborn errors of metabolism associated with brain damage. Early detection and prevention of their manifestations. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism.* (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 91-111.

The frequency and causes of brain damage are outlined, and the various forms of metabolic MR from hereditary enzyme defects are enumerated. A screening program for metabolic MR confined to paper chromatographic analysis of the amino acids, sugars, and phenolic acids excreted in the urine is outlined. A satisfactory means of early detection and the possibility of prevention exist for phenylketonuria (PKU), maple syrup urine disease (MSUD), and galactosemia. The best screening test for PKU, MSUD, and galactosemia is the Guthrie test, and a routine screening test of every newborn is important (preferably done on the fourth or fifth day of life). Prevention of these diseases can be accomplished by placing the patients on a phenylalanine-restricted diet for PKU within the first 3 months of life; on a leucine, isoleucine, and valine-restricted diet for the first 7 to 10 days of life for MSUD; and on a galactose-free diet for galactosemia. Early detection of these metabolic disorders is of decisive importance

to the clinician for genetic counseling and for development of a more or less effective treatment and, therefore, prevention of irreversible brain damage. (52 refs.)
A. J. del Rosario.

893 LEVY, HARVEY L. Large-scale studies in Massachusetts. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 9, p. 152-166.

Large-scale studies to identify, treat, and study inborn errors of metabolism are being conducted in Massachusetts. Amino acid analyses of more than 96,000 individuals resulted in the early detection of ornithinemia, homocystinuria, maple syrup urine disease, transient neonatal tyrosinemia, transient hypermethioninemia, and transient hyperaminiacidemia. The results of urine amino acid screening by paper chromatography on more than 17,000 individuals included the detection of 10 infants with cystinuria, one infant with the urine amino acid pattern of Hartnup disease, one case of histidinemia, one case of transient hydroxyprolinuria, and one case of hyperglycemia. A phenylketonuria detection program carried out on 517,206 newborns resulted in the identification of 73 hyperphenylalaninemics. Of these, there were 34 cases of classical phenylketonuria, 11 atypical cases, and 28 cases in which phenylalanine intolerance later became normal. (7 refs.) - *J. K. Wyatt.*

894 WALKER, FRANK A.; AGARWAL, AVADH B.; & SINGH, RAJ. The importance of the falsely positive reaction. *Journal of Pediatrics*, 75(2):344, 1969. (Letter)

Case studies demonstrate that some infants who fail to thrive and develop within normal limits and who present false positive tests for acetoacetic acid and ketones in the urine may have a metabolic disorder that is diagnosable and in many instances treatable. (7 refs.) - *S. Half.*

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895 ROUSE, BOBBYE M. Pitfalls of diagnostic screening for inborn errors of metabolism. *Texas Medicine*, 65(5):50-54, 1969.

Experience with mass screening for inborn errors of metabolism (primarily phenylketonuria [PKU]) has uncovered sources of error in specimen collection, interpretation, and patient followup. A child with a positive Guthrie test should receive further testing to differentiate true PKU from variant forms of PKU, transient hyperphenylalaninemia, transient tyrosinemia, tyrosinosis, and untreated maternal PKU before treatment and/or genetic counseling are initiated. The dietary history should be carefully recorded and serum phenylalanine monitored after treatment has begun. Further screening procedures might most profitably be used if indicated by examination or family history and not introduced as a result of legislative action. (21 refs.)
E. L. Rowan.

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896 TOCCI, PAUL M.; RUIZ, EVA; & AQUERO, GRACIELLA. The chemical detection of inherited disorders that result in mental deficiency. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 10, p. 167-190.

Since 1965, a screening program to examine patients suspected of having metabolic disorders at the University of Miami has screened over 7,000 individuals. A battery of simple qualitative tests used with one-dimensional paper chromatography is used to test for amino acids, sugars, mucopolysaccharides, purines, pyrimidines, phenolic acids, simple organic acids, α-keto acids, peptides, indoles, and imidazoles. Fresh urine is examined for odor, color, density, reducing substances, pH, protein, glucose, and ketones. Specific tests are made to screen for ferric chloride, keto acids, cystine, homocystine, tyrosine, mucopolysaccharides, proline, increased α-amino nitrogen excretion, calcium, metachromatic leukodystrophy, homogentistic acid, copper, and indican. Simple blood screening procedures are used to detect glucose-6-phosphate dehydrogenase deficiency, galactosemia, and ceruloplasmin. The tests described can be used to detect genetic disorders which may result in later MR in infants who seem healthy. Early diagnosis can result in early treatment and, in some cases, normal physical and mental development in the presence of an inherited biochemical defect. Positive or questionable cases identified with these screening tests must be followed up with specific quantitative tests. (27 refs.) - *J. K. Wyatt.*

897 AIRAKSINEN, EILA; FARRELL, GORDON; & JOHNSON, ROBERT J. A technique for semiquantitative analysis of plasma amino acids. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 11, p. 191-208.

A semiquantitative method for the determination of plasma amino acids uses one-dimensional paper chromatography of deproteinized plasma and densitometer recording. The normal ranges were established by preparing amino acid chromatograms from the plasma of 75 school-age children who were free of obvious diseases. There were minor, but marginally significant, differences between age and sex groups in the developed patterns. This method permits the reliable detection of phenylketonuria, maple syrup urine disease, hypervalinemia, citrullinemia, and hyperglycinemia as well as the detection of most cases of histidinemia. Unless isatin or Ehrlich's p-dimethylaminobenzaldehyde staining is used, hyperprolinemia with relatively low proline concentration may be missed. The detection of homocystinuria is greatly increased when urinary screening for amino acids containing sulfur as well as blood screening is carried out. This easy, inexpensive method tends to produce more objective findings than methods in which evaluation of the chromatograms is by visual comparison with control spots. (19 refs.) - *J. K. Wyatt.*

898 AIRAKSINEN, MAUNO M. Experimental approach to the role of monoamine deficiency as a cause of mental retardation. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 19, p. 310-317.

Several metabolic disorders may cause MR because they produce a chemical denervation of the brain. P-chlorophenylalanine cannot be used alone to evaluate the role of 5-hydroxytryptamine (5-HT) synthesis in the growing brains of rats because it effectively blocks brain tryptophan hydroxylase and liver phenylalanine hydroxylase and produces the chemical manifestations of true phenylketonuria (PKU). There is some evidence that the main cause of the 5-HT decrease in PKU, maple syrup urine disease, hyperhistidinemia, and hyperglycemia is the inhibition of tryptophan absorption and uptake to the brain. Catecholamine synthesis is blocked by tyrosine hydroxylase inhibitors and increased by high doses of DOPA. Oxypertine blocks central norepinephrine (NE) mechanisms in infant rats. This drug also decreases brain dopamine levels, releases NE from storage vesicles, and in high doses, decreases brain 5-HT. The chronic administration of reserpine has caused a permanent impairment of NE uptake in the heart of developing rats. The actual effects of p-chlorphenylalanine, oxypertine, 5-hydroxytryptophan (5-HTP), and dihydroxyphenylalanine on the brain amine levels in the rat depend on the dose and methods of administration. Preliminary results indicate that the addition of 5-HTP to rats made phenylketonuric with p-chlorophenylalanine results in better performance on physical and learning tests. (44 refs.) - *J. K. Wyatt.*

899 ASAO, HIROKAZU; & OJI, KIICHI. *Hepatocerebral Degeneration*. Springfield, Illinois, Charles C. Thomas, 1968, 93 p. $7.50.

In hepatocerebral degeneration, the brain and liver are involved simultaneously, and both organic and functional disturbances occur. This syndrome includes nuclear jaundice in children, hepatic coma in liver disease, inose and pseudoulegyria types of hepatocerebral degeneration, and hepatolenticular degeneration (Wilson's disease). Characteristic biochemical alterations in Wilson's disease include increased excretion of copper and amino acids in the urine, decreased serum level of ceruloplasmin and serum copper, and increased copper content in the liver and brain. Hepatocerebral degeneration syndrome is based on a chain of physiological processes rather than a specific disease factor and may arise from many different causes. Clinical and pathological findings are due to severe liver failure associated with reduced availability of enzymes and substrates for ammonia, amines, and short chain fatty acid metabolism and/or functional vascular exclusion of the liver parenchyma. The cerebral effects of hepatic failure may include hepatic clouding of consciousness, intensifying to stuporous coma, and accompanied by motor hyperactivity and speech disorders. Possible treatment methods include the treatment of metabolic disturbances of protein and amino acids and the treatment of lipid metabolism disturbances related to the role of long chain fatty acids. Treatment is aimed at removing precipitating factors, clearing the intestine by decreasing the sources of toxic substances, counteracting the effects of toxic substances in the blood, and/or protecting

the liver and improving its functioning. This book would be of interest to neurologists, internists, biochemists, and physiologists. (194 refs.) - *J. K. Wyatt.*

CONTENTS: Clinical Features; Electroencephalogram in Hepatocerebral Degeneration; Pathological Aspects of Hepatocerebral Degeneration; Ammonia Theory and Its Criticism; Mechanism to Produce Hepatic Encephalopathy; Treatment; Summary.

900 FISCHER, M.; HAYEK, H.; SCHNACK, H.; SCHENCK, W.; BAUER, B.; & KUNZER, W. Coagulation abnormalities in Wilson's disease. *German Medical Monthly*, 15(5):223-228, 1969.

A hemorrhagic diathesis was found in 8 children with the hepatic form of Wilson's disease. Progressive destruction of the liver parenchyma by copper deposition resulted in decreased production of coagulation factors formed by the liver and subsequent defects in blood coagulation, platelet function, and fibrinolysis. D-penicillamine treatment promoted copper excretion and resulted in marked improvement of the bleeding disorder in all patients. Wilson's disease should be considered in children with coagulation disorders of unknown etiology. (7 refs.) - *E. L. Rowan.*

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901 SZEINBERG, ARIEH; COHEN, BERNARD E.; GOLAN, RACHEL; PELED, ILANA; LAVI, URI; & CRISPIN, MOSHE. Persistent mild hyperphenylalaninemia in various ethnic groups in Israel. *American Journal of Diseases of Children*, 118(4):559-564, 1969.

Routine phenylketonuria (PKU) screening of 178,174 Israeli infants revealed 7 cases of classic PKU (blood phenylalanine levels above 20 mg/100 cc) and 9 cases of mild hyperphenylalaninemia (levels above 4 mg/100 cc). Follow-up of children with mild phenylalanine elevation showed this elevation to be persistent on a normal diet with no response to phenylalanine loading tests. The loading tests did produce an abnormal response in at least one parent in all families, however. The ethnic distribution of cases of classic PKU and mild hyperphenylalanemia was markedly different, suggesting that these represent 2 different genetic disorders. (25 refs.) *E. L. Rowan.*

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902 BERRY, HELEN K. Phenylketonuria: Diagnosis, treatment, and long-term management. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 1, p. 3-35.

The incidence of phenylketonuria is probably not greater than 1/10,000 among newborn infants. Biochemical characteristics include: serum phenylalanine over 15 mg %; more than 100 mg/ml of urine phenylalanine; more than 10 mg/ml urine orthohydroxyphenylacetic acid; and serum tyrosine below 5 mg %. Most children with high phenylalanine concentrations in the blood are MR if the disease is not recognized before the age of one year. Chances of normal development are greater if treatment is with a low phenylalanine diet. Treatment is aimed at the reduction of the concentration of phenylalanine in the blood and the adjustment of phenylalanine intake to maintain blood phenylalanine levels at normal levels in order to allow normal growth and development in spite of the metabolic defect. Lofenalac, a protein substitute, is a treatment diet which is combined with small measured amounts of natural foods to provide the additional amounts of phenylalanine needed for growth. Frequent monitoring with microtechniques is used to make dietary alterations and establish individual dietary requirements. The creation of as normal an eating atmosphere as possible is a goal of treatment. Treatment is most difficult and most critical during the first year of life because phenylalanine requirements are changing rapidly and feeding patterns are being established. Favorable results occur when treatment is initiated prior to the age of 15 weeks. Treatment of older patients has resulted in improved behavior and manageability, but mental ability has not altered. (19 refs.) - *J. K. Wyatt.*

903 FULLER, RENEE N.; & SHUMAN, JOYCE B. Phenylketonuria and intelligence: Trimodal response to dietary treatment. *Nature*, 221(5181):639-642, 1969.

The frequency distribution of Binet IQ or Gesell language-adaptive quotient for 113 phenylketonuric children was trimodal, and the 3 groups responded differently to dietary control. The upper 2 modes had improved performances under dietary control as long as the blood phenylalanine level was maintained at least at 2 mg/100 ml (normal adult fasting level is 1-2 mg/100 ml), while the lowest mode (optimal blood phenylalanine level 9 mg/100 ml or higher) did not change and sometimes showed a deterioration of performance. The differences between the 3 modes could not

be attributed to the degree of dietary treatment or the age of initiation of the treatment. The children who made less progress were affected more by discontinuation of dietary treatment than those who showed progress under dietary control. This may reflect a further biochemical disorganization or psychological factors such as rejection. Psychological factors may be involved in the lack of sensitivity to withdrawal of dietary treatment in children of the middle mode. The striking improvement after entering school may well counterbalance the effect of diet discontinuation. Retesting confirmed that deterioration did occur in this group. The results could explain the conflicting reports on the safety of diet discontinuation. (13 refs.) - *L. S. Ho.*

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904 COULSON, W. F.; & BRAY, P. F. An association of phenylketonuria with ulegyria. *Diseases of the Nervous System*, 30(2): 129-132, 1969.

An SMR girl who died at age 13 had phenylketonuria and a history of an ictal-cyanotic episode in infancy. Neuropathological examination revealed microcephaly, generalized gyral atrophy, and a severe lack of myelination. Many cortical areas showed a nerve cell depletion and replacement by vacuolated glial tissue. The association of phenylketonuria and ulegyria may have been fortuitous, but preexisting brain damage may have predisposed to prolonged seizure activity with a resultant post-ictal ischemic atrophy. (12 refs.) - *E. L. Rowan.*

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905 MENKES, JOHN H.; & AEBERHARD, ERNESTO. Maternal phenylketonuria: The composition of cerebral lipids in an affected offspring. *Journal of Pediatrics*, 74(6):924-931, 1969.

The chemical composition of cerebral lipids and the fatty acid pattern of the major white matter and myelin glycolipids were examined by using thin-layer and gas chromatography on cerebral specimens from an SMR heterozygote offspring (50 yrs of age) of a phenylketonuric mother. The lipid abnormalities included slight reductions in the levels of cholesterol, cerebrosides, and sulfatides, as has been seen in patients with PKU, and the relative amounts of nonhydroxylated sulfatides were also reduced. Frontal lobe gray and white matter and myelin specimens showed a loss in sulfatide cerebronic acid and an increase in α-hydroxy nervonic acid, as was also seen in brains of 3 phenylketonuric patients. In addition, the presence of large amounts of esterified kerasin cerebrosides was detected. The latter were probably formed *in vivo* as a result of esterification of long-chain extra-myelin cerebrosides. The similarities observed between specimens from this brain and from brains of homozygous PKU patients indicate that irreversible neurochemical damage is done to the fetus by exposure to a deranged amino acid environment. (19 refs.) - *M. G. Conant.*

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906 SCHLESINGER, KURT; SCHREIBER, ROBERT A.; GRIEK, BARBARA J.; & HENRY, KENNETH R. Effects of experimentally induced phenylketonuria on seizure susceptibility in mice. *Journal of Comparative and Physiological Psychology*, 67(2):149-155, 1969.

Phenylketonuria (PKU) may be correlated with a susceptibility to audiogenic seizures which are the result of lowered levels of serotonin (5-HT) in the brain. Four experiments were conducted on 571 DBA/2J, C57BL/6J, and F_1 hybrid mice. Seizures were induced by an electric bell which sounded for 90 seconds; tests were scored as no response, wild running, clonic seizure, tonic seizure, or lethal seizure. Phenylalanine levels were manipulated by drug injections, and the mice were maintained on 3 diets (control, excess phenylalanine, and no phenylalanine nor tyrosine). Parachlorophenylalanine (p-ChPhe) was injected once for an acute regimen and every 3 days for the chronic test. α-Methyl tyrosine (α-MT) was injected 2 hours before seizure tests. p-ChPhe lowered the levels of 5-HT in brains by 51% in the acute test and by 43% in the chronic. Chronic phenylalanine lowered brain 5-HT by 20%. On DBA/2J mice, p-ChPhe and α-MT separately increased seizures, but the increases became significant only when used together. On F_1 mice, separate and combined treatments were statistically significant. On DBA/2J mice, chronic phenylalanine injections increased seizures, but not significantly until combined with α-MT. In DBA/2J mice, seizures were significantly increased by the 2 test diets. In general, seizure susceptibility was increased by any increase in phenylketogenic treatment, and the DBA/2J and F_1 strains were more affected than C57BL/

6J mice. Symptoms other than MR can be successfully studied by a phenylketogenic treatment technique. (26 refs.) - *S. Markworth.*

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907 HALLOCK, JAMES; *MORROW, GRANT, III; KARP, LOUIS A.; & BARNESS, LEWIS A. Postmortem diagnosis of metabolic disorders: The finding of maple syrup urine disease in a case of sudden and unexpected death in infancy. *American Journal of Diseases of Children*, 118(4):649-651, 1969.

A 7-day-old boy who suffered sudden cardiopulmonary arrest was found to have had maple syrup urine disease when tissue was examined at postmortem. Unfixed tissue was analyzed for branched chain amino acids, and high concentrations of valine, isoleucine, and leucine were observed. Allo-leucine is never found in normal tissue but was found in this patient. Metabolic disorders may play an important role in sudden and unexpected infant death, and in selected cases (flaccidity, coma, seizures, or prolonged vomiting) tissue examination for amino acids, organic acids, and/or glycogen may be warranted. (17 refs.) *E. L. Rowan.*

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Philadelphia, Pennsylvania 19104

908 GHADIMI, H. Histidinemia to date. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 3, p. 58-71.

Since the first report on histidinemia was introduced to the medical literature in 1960, more than 20 such cases have been reported. The degree of MR varies greatly, but degree and incidence appear to be much smaller than in phenylketonuria. Of these 20 cases, 6 have IQs below 65, the IQs of 7 range from 65 to 85, and intelligence is normal for 4 and undecided for the other 3. The biochemical block in histidinemia seems to be in the conversion of histidine to glutamic acid or in the major catabolic pathway. Among the biochemical results of histidase deficiency are: increased histidine concentration in the urine, blood, and CSF; the excretion of large amounts of imidazolepyruvic acid, imidazolelactic acid, and imidazoleacetic acid in the urine; a low glutamic acid blood concentration; high concentration of α-alanine in the blood and urine; and in some cases, low blood serotonin. No special clinical characteristic, except a high incidence of speech retardation, has been identified for histidinemia. Speech retardation may be related to diet. A high-protein diet during the crucial period of brain and speech development may contribute to speech retardation because of the resulting high concentration of histidine in the blood. Diagnosis of histidinemia should include a ferric chloride test in the second week of life, a quantitative determination of blood histidine, a histidine loading test, determination of formiminoglutamic acid, and confirmation of the diagnosis by a direct enzymatic assay. Treatment can probably be accomplished by a low-protein diet to keep the blood histidine within a permissible range. The parents of histidinemia patients are heterozygotes, and the mode of inheritance is recessive. (15 refs.) - *J. K. Wyatt.*

909 GATFIELD, P. D.; KNIGHTS, R. M.; DEVEREUX, M.; & POZSONYI, J. P. Histidinemia: Report of four new cases in one family and the effect of low-histidine diets. *Canadian Medical Association Journal*, 101(8): 71-75, 1969.

An SMR female (CA 6 yrs) with histidinemia was found to have 3 (of 5) siblings affected with the same biochemical abnormality and extremely variable severity of clinical impairment. The IQ scores of the siblings were not related to serum histidine concentrations; however, there was a direct relation between the presence of the abnormality and the child's performance on neuropsychological tests. Scores for the affected children indicated a mild or moderate degree of brain damage. In 2 of the children placed on a low-histidine diet, serum histidine levels fell, but there were no changes in their clinical pictures over a 3-month period. (13 refs.) - *M. G. Conant.*

Children's Psychiatric Research Institute
London 12, Ontario, Canada

910 CARSON, NINA A. J.; CARRE, I. J.; & NEILL, D. W. Homocystinuria in Northern Ireland. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 2, p. 36-57.

Seventeen patients with homocystinuria have been identified in Northern Ireland since 1962; all Ss evidenced increased homocystine in the urine, and the majority had clinical characteristics which included fair hair, blue eyes, ectopia lentis, a malar flush with

poor peripheral circulation and livedo reticularis, progressive MR, and skeletal changes. Marfan-like skeletal changes included arachnodactyly, chest deformities, and high-arched palate and appeared in early adolescence. Fifteen patients had a peculiar stiff-legged gait which may be due to an inclination to misjudge distance in depth because of the myopia associated with lens dislocation, the presence of pes cavus, poor intellectual development, and/or muscular weakness. Forty-three percent of the patients had thrombotic episodes, and at least 3 died as a result of thrombosis. Studies of methionine metabolism indicated that the basic defect in homocystinuria was a deficiency or abnormality in hepatic cystathionine synthetase which prevented the formation of cystathionine from homocysteine. This enzyme block results in an accumulation of homocysteine in the blood and tissues, which may in turn lead to high concentrations of methionine in the blood and increased urinary excretion. Biochemical diagnosis is accomplished by a positive nitroprusside-cyanide test of the urine and the use of a chromatographic technique to differentiate between excessive cystine or homocystine. Treatment methods have included a diet low in methionine with added cystine and the coenzymes B_6 and folic acid, oral folic acid therapy, or large doses of oral pyridoxine. Homocystinuria appears to be an autosomal recessive type of inheritance similar to other inborn errors of amino acid metabolism. (23 refs.) - *J. K. Wyatt.*

911 JOHNSTON, S. S. Pupil-block glaucoma in homocystinuria. *British Journal of Ophthalmology*, 52(3):251-256, 1968.

Ectopia lentis secondary to zonular degeneration is commonly seen in individuals with homocystinuria, and anterior displacement of the lens resulted in pupil-block glaucoma in 5 cases. All cases responded to medical management, but repeated episodes made surgical removal of the lens necessary. Anticoagulation was deemed essential before surgery because of the high risk of thromboembolic episodes associated with homocystinuria. (18 refs.) - *E. L. Rowan.*

Royal Victoria Hospital
Belfast 12, Ireland

912 FARRELL, GORDON; RAUSCHKOLB, ELIZABETH W.; MOURE, JEAN; HEADLEE, R. E.; & MOSER, HUGO. Argininosuccinic aciduria. *Texas Medicine*, 65(5):90-101, 1969.

Two sisters with argininosuccinic aciduria (CA 20 and 8 yrs old) were diagnosed by the isolation or argininosuccinic acid from the urine, the absence of argininosuccinase in red blood cells, and the presence of trichorrhexis nodosa. Both patients were MR and presented abnormal EEGs with a 2-3/second spike and slow wave discharge. Patients with this disorder lack the mechanism for synthesizing arginine; therefore, they must rely on dietary intake of this amino acid. The prevention of hyperammonemia and the avoidance of arginine deficiency are most important in the treatment of this disorder. (23 refs.) *L. S. Ho.*

Texas Research Institute of Mental Sciences
Houston, Texas 77025

913 KEELE, DOMAN K.; MARKS, JAMES F.; & KAY, JACOB L. Familial hyperuricemia in a Negro family. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 6, 106-118.

The pedigree of a Negro family consisted of 2 normal female children and 3 male children who exhibited the characteristics of the X-linked form of familial hyperuricemia. The 2 older boys were MR and had spasticity of all extremities as well as choreoathetosis. Their compulsory biting resulted in mutilation of the lower lip. Serum uric acid levels for these boys were 7.6 to 6.9 mg % and 7.9 mg % respectively. Treatment with allopurinal was used to maintain serum uric acid level in the normal range and to control irritability and restlessness. Diagnosis for the third male was tentatively made at birth on the basis of an elevated cord serum uric acid level. The diagnosis was later confirmed when there was a rapid rise of the serum uric acid. Treatment with allopurinol did not prevent the development of the typical clinical syndrome of hyperuricemia. (10 refs.) - *J. K. Wyatt.*

914 EMMERSON, B. T.; & WYNGAARDEN, J. B. Purine metabolism in heterozygous carriers of hypoxanthine-guanine phosphoribosyltransferase deficiency. *Science*, 166(3912): 1533-1535, 1969.

The urate pool and daily turnover of urate, together with the rate of incorporation of

glycine into urate, were measured in 3 asymptomatic mothers who had sons with various degrees of deficiency of hypoxanthineguanine phosphoribosyltransferase activity. Two of these mothers had abnormally increased values for the urate pool, urate turnover, and 24-hour urinary excretion of uric acid. These 2 mothers also had reduced hypoxanthineguanine phosphoribosyltransferase activity and increased adenine phosphoribosyltransferase activity in erythrocyte lysates. All 3 mothers showed an abnormal increase in urate production, as judged by the rate of incorporation of glycine into urate. (15 refs.) *Journal abstract.*

University of Queensland
Brisbane, Australia

915 BAKAY, BOHDAN; TELFER, MARY A.; & NYHAN, WILLIAM L. Assay of hypoxanthine-guanine and adenine phosphoribosyl transferases. A simple screening test for the Lesch-Nyhan syndrome and related disorders of purine metabolism. *Biochemical Medicine*, 3(3): 230-243, 1969.

A simple screening test can measure the activity of the enzyme hypoxanthine guanine phosphoribosyl transferase which is congenitally absent in the Lesch-Nyhan syndrome. The products of the reaction of available enzyme and radioactively labeled hypoxanthine are precipitated with lanthanum chloride, and the isotope remaining in the supernatant is measured. When the enzyme is absent or deficient, then essentially all the isotope is recovered. The test can be efficiently carried out on whole blood (quantitative) and blood dried on filter paper (screening) and, with other isotopes, is suitable for screening other disorders of purine metabolism. (11 refs.) *E. L. Rowan.*

University of Miami School of Medicine
Miami, Florida 33146

916 VAN DER ZEE, S. P. M.; SCHRETLEN, E. D. A. M.; & MONNENS, L. A. H. Megaloblastic anaemia in the Lesch-Nyhan syndrome. *Lancet*, 1(7557):1427, 1968. (Letter)

Adenine administered orally to a 9-year-old boy with the Lesch-Nyhan syndrome caused a striking improvement in his megaloblastic anemia. The treatment increased the patient's hemoglobin, decreased his red blood cell volume, and caused the disappearance of the megaloblasts in the bone marrow. Hyperuricemia was corrected by allopurinol. (10 refs.) *A. Huffer.*

Saint Radboud Hospital
Nijmegen, Holland

917 SCHERZER, ALFRED L.; & ILSON, JEROME B. Normal intelligence in the Lesch-Nyhan syndrome. *Pediatrics*, 44(1):116-120, 1969.

A 6-year-old boy with typical features of the Lesch-Nyhan syndrome was evaluated by the Full Range Picture Vocabulary Test supplemented by selected Picture Vocabulary Subtests of the Stanford-Binet and found to have normal intellectual potential. MR, which is uniformly reported in this syndrome, may result from difficulties in testing such patients due to abnormal agitation, self-mutilating behavior, and poor communication. Formal psychological testing of these patients is essential for planning realistic rehabilitation programs and for studying responses to various treatments. (18 refs.) - *L. S. Ho.*

525 East 68th Street
New York, New York 10021

918 FELIX, JEANETTE S.; & DeMARS, ROBERT. Purine requirement of cells cultured from humans affected with Lesch-Nyhan syndrome (Hypoxanthine-guanine phosphoribosyltransferase deficiency). *Proceedings of the National Academy of Sciences*, 62(2):536-543, 1969.

Skin fibroblasts were cultured from 3 boys with the Lesch-Nyhan syndrome and from 4 normal controls; growth response experiments in media containing varying amounts of adenine and folic acid (a participant in 2 stages of purine biosynthesis) showed that the cells from patients would grow only in media containing supplementary adenine and folic acid and the folic acid requirement of these mutant cells is at least 50 times greater than that of normal cells. Both folic acid and adenine supplements may provide mutant cells with means of making more inosinic acid available for conversion to adenine and guanine nucleotides. Therapy with adenine or folic acid from birth may prevent development of the disease in mutant males. The gene involved is X-linked and shows clonal, single-allele-expression. Phenotypically mutant heterozygous clones derived from females heterozygous for the mutant gene have the same

requirement for adenine or folic acid as cells from hemizygous mutant males, indicating that the normal allele is repressed in these clones. The adenine-folic acid requirement of mutant cells is a method of direct clonal selection for rare, phenotypically normal cells in mutant populations. (25 refs.) - *M. G. Conant.*

University of Wisconsin
Madison, Wisconsin 53706

919 GREENE, MARTIN L.; FUJIMOTO, WILFRED Y.; & *SEEGMILLER, J. EDWIN. Urinary xanthine stones--A rare complication of allopurinol therapy. *New England Journal of Medicine*, 280(8):426-427, 1969.

The unusual complication of urinary xanthine stones occurred in a 16-year-old boy with Lesch-Nyhan syndrome who was being treated with allopurinol in an attempt to reduce his production of uric acid. Allopurinol inhibits the enzyme xanthine oxidase which converts hypoxanthine to xanthine to uric acid. This patient, however, also had a complete deficiency of hypoxanthine-guanine phosphoribosyltransferase so that he already had a marked increase of these uric acid precursors in his urine. Xanthine is the least soluble of the urinary purines, and stone formation occurred. This may be controlled by high fluid intake, urinary alkalinization, and an optimal dose of allopurinol which will cause more urinary purine to be excreted in the form of the more soluble hypoxanthine. (10 refs.)
E. L. Rowan.

*National Institutes of Health
Bethesda, Maryland 20014

920 KOGUT, MAURICE D.; BLASKOVICS, MILAN; & DONNELL, GEORGE N. Idiopathic hypoglycemia: A study of twenty-six children. *Journal of Pediatrics*, 74(6):853-871, 1969.

On the basis of their response to various tolerance tests (oral glucose tolerance test, intravenous tolbutamide tolerance test, leucine tolerance test, subcutaneous glucagon tolerance test, and ketogenic provocative test), 26 children with idiopathic hypoglycemia were classified as follows: 13 had ketotic hypoglycemia, 5 had leucine sensitivity, 3 had transient neonatal hypoglycemia, and 5 were unclassified. Of 24 patients followed, 11 had some degree of MR, 9 showed EEG abnormalities, and 9 had various neurological anomalies. The main metabolic abnormality in patients with leucine sensitivity was an exaggerated insulin response, while those with ketotic hypoglycemia did not have this response following administration of L-leucine or tolbutamide. The latter patients showed no change in blood insulin levels following the ketotic diet; this suggests that the insulin necessary to preserve liver glycogen is not secreted. A low-leucine diet begun late in life did not benefit most of the patients with leucine sensitivity, and subtotal pancreatectomies in 3 patients were not beneficial. (55 refs.) - *M. G. Conant.*

Childrens Hospital of Los Angeles
Los Angeles, California 90027

921 NYHAN, WILLIAM L.; & ANDO, TOSHIYUKI. Recent observations in hyperglycinemia. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 4, p. 72-86.

Hyperglycinemia is classified as ketotic and nonketotic; the ketotic type is characterized by developmental retardation, neutropenia, thrombocytopenia, osteoporosis, EEG abnormalities, seizures, periodic ketosis with vomiting, dehydration, lethargy, and coma. The clinical manifestations of the nonketotic type include developmental retardation, failure to thrive, spastic paraplegia, opisthotonos, seizures, and hypooxaluria. Almost all patients die during the neonatal period. The preferred method of screening is by colorimetric or column chromatography blood analysis. The concentrations of glycine in the blood of untreated patients may be more than 10 times those of control populations. Hyperglycinemia is clearly due to an abnormality in the use of glycine and is related to multiple amino acid toxicity. In hypooxaluric hyperglycinemia, there is a defect in the conversion of glycine to CO_2 and hydroxymethyltetrahydrofolic acid. Recurrent episodes of ketosis and acidosis are clearly related to protein dietary intake but not to glycine concentrations. Treatment of a female patient with the ketotic type, who has survived to the age of 3 years and is intellectually normal, began with 0.6 gm/kg of protein supplemented with amino acids up to the equivalent of 3 gm/kg at age 3 days. This treatment lasted for 40 days. A low protein diet (0.6 gm/kg) was given for 2 months and then raised to 1.3 gm/kg. (18 refs.)
J. K. Wyatt.

922 FUJIMOTO, WILFRED Y.; GREENE, MARTIN L.; & *SEEGMILLER, J. EDWIN. Cockayne's syndrome: Report of a case with hyperlipoproteinemia, hyperinsulinemia, renal disease, and normal growth hormone. *Journal of Pediatrics*, 75(5):881-884, 1969.

A 9-year-old Caucasian girl who presented with symptoms of Cockayne's syndrome (cachectic dwarfism, prematurely aged appearance, MR, microcephaly, intracranial calcifications, retinal anomalies, deafness, and skin hypersensitivity to sunlight) was found to have type II hyperlipoproteinemia, hyperinsulinemia, and renal insufficiency with acidosis as well. The dwarfism could not be attributed to abnormal growth hormone responses as these were normal. The S had an older brother who had died at age 11 years of an identical disorder; therefore, the condition appears to be genetically recessive, although both parents denied consanguinity. The mechanism of hyperinsulinemia could not be studied because of the S's frail condition. Serum lipoprotein patterns showed an increase in β-lipoproteins; this could result from diet, or it may have been secondary to hypothyroidism or may have been inherited as a separate autosomal recessive condition. This patient also had a decrease in endogenous creatine clearance with azotemia and hyperchloremic acidosis. Technique differences did not allow comparisons with other studies. (12 refs.) - *M. D. Nutt.*

*University of California at San Diego
La Jolla, California 92037

923 LONSDALE, DERRICK; FAULKNER, WILLARD R.; PRICE, J. WAIDE; & SMEBY, ROBERT R. Intermittent cerebellar ataxia associated with hyperpyruvic acidemia, hyperalaninemia, and hyperalaninuria. *Pediatrics*, 43(6):1025-1034, 1969.

A 6-year-old boy with optic atrophy and intermittent episodes of ataxia which recurred after infections or injuries was observed continuously during an 8-day episode. The boy's ataxia and mental confusion increased throughout the day and became most severe in the evening. Levels of pyruvate, lactate, and alanine in the serum and urine increased tremendously during the ataxic episode and remained abnormally high in the urine even when the child was clinically well. It is suggested that a partial block in the oxidative decarboxylation of pyruvic acid may exist and the encephalopathy is similar to that described by Wernicke in which pyruvate levels are increased in the serum due to thiamine deprivation. The elevated urinary levels of pyruvate and alanine when the child was clinically well were decreased by massive doses of thiamine; however, they were not affected by pharmacological doses of the vitamin B complex. (28 refs.) - *M. G. Conant.*

Cleveland Clinic
Cleveland, Ohio 44106

924 LEVIN, B.; ABRAHAM, J. M.; OBERHOLZER, V. G.; & BURGESS, E. ANN. Hyperammonaemia: A deficiency of liver ornithine transcarbamylase. Occurrence in mother and child. *Archives of Disease in Childhood*, 44(234):152-161, 1969.

Hyperammonemia (from liver ornithine transcarbamylase deficiency) was diagnosed in a female infant and in her apparently asymptomatic mother. The infant failed to thrive and began vomiting after institution of cow milk in her diet, and at 5 months of age, she showed spasticity, mild opisthotonos, and impaired vision and hearing due to cerebral damage. The plasma ammonia level was above normal even when fasting, and on a normal protein intake, both plasma glutamine and glutamic acid were increased. Liver ornithine transcarbamylase activity was greatly reduced. The mother has had a lifetime aversion to normal protein intake and has raised plasma ammonia levels. The father was normal. The infant showed some improvement on a severely restricted protein intake. These 2 cases and those previously reported suggest that hyperammonemia may be a sex-linked dominant trait. (21 refs.) - *M. G. Conant.*

Queen Elizabeth Hospital for Children
London, England

925 LEVIN, B.; DOBBS, R. H.; BURGESS, E. ANN; & PALMER, T. Hyperammonaemia. A variant type of deficiency of liver ornithine transcarbamylase. *Archives of Disease in Childhood*, 44(234):162-169, 1969.

A male infant who began vomiting and failed to thrive from age 6 months had, at 8.5 months, an unexplained acute episode of illness with lethargy, drowsiness, and coma. Plasma ammonia and urinary glutamine levels were elevated, and the liver ornithine transcarbamylase activity was 25% of normal. Growth resumed upon severe restriction of protein intake, and at 2 years of age, the child is normal with no brain damage. Plasma ammonia levels have fallen but are still above normal. It is suggested that this case is a variant type of liver ornithine transcarbamylase deficiency. The mildness of the illness and the fact that liver ornithine

transcarbamylase activity is 5-7% of normal is not typical of hyperammonemia. A different mutation of the gene involved may explain this variation. (18 refs.) - *M. G. Conant.*

Queen Elizabeth Hospital for Children
London E.2, England

926 HOPKINS, I. J.; CONNELLY, J. F.; DAWSON, A. G.; HIRD, F. S. R.; & MADDISON, T. G. Hyperammonaemia due to ornithine transcarbamylase deficiency: Clinical and biochemical features. Paper presented at the annual meeting of the Australian Pediatric Society, 1967.

A patient, first seen at 10 months of age, exhibited the clinical features of hyperammonemia. Urine chromatography showed increased glutamine and glutamic acid excretion. Blood ammonia was greater than 400 µg/100 ml. Although coma and death ensued, marked improvement was seen with restricted protein intake. (2 refs.) - *A. Huffer.*

927 HERRIN, J. T.; & *McCREDIE, D. A. Peritoneal dialysis in the reduction of blood ammonia levels in a case of hyperammonaemia. *Archives of Disease in Childhood*, 44(234):149-151, 1969.

Peritoneal dialysis was of considerable value in reducing blood ammonia levels during a hyperammonemia crisis in an 18-month-old infant with ornithine transcarbamylase deficiency. Peritoneal dialysis reduced the blood ammonia from an extremely high level (1,000-2,000 µg/100 ml) to 800 µg/100 ml within 4 hours and continued to lower it to 330 µg/100 ml. This stable state could be maintained despite continuous high ammonia production in this child. (11 refs.) *L. S. Ho.*

*Royal Children's Hospital
Melbourne, Victoria, Australia

928 Hyperammonaemia. *Lancet*, 2(7613):196-197, 1969.

The symptoms of hyperammonemia are usually precipitated in infancy when the child is weaned from the breast to cow's milk, thus ingesting a diet containing more than 1.5 g protein/kg body weight. The patient usually shows hypotonia, loss of consciousness, progressive enlargement of the liver, and limited physical and mental development. Laboratory findings will include a high blood ammonia level, a high level of glutamine, the absence of citrulline and arginine, and a lowered level of ornithine transcarbamylase. Treatment measures usually attempt to reduce the plasma ammonia to nontoxic levels, either by limiting the protein intake or by administering citric acid. The genetic nature of this disorder is still unknown. (10 refs.) *M. G. Conant*

929 McCREDIE, D. A.: & HERRIN, J. T. Management of a patient with hyperoxaluria. Paper presented at the annual meeting of the Australian Pediatric Society, 1967.

Because hyperoxaluria was found at autopsy in an infant who died at 5 months of age, a subsequent sibling was investigated at birth and was found to have a similar condition. A treatment diet includes calcium carbimide, frusemide, and low protein ingredients, and the results have been encouraging. (No refs.) *A. Huffer.*

930 DONNELL, GEORGE N.; BERGREN, WILLIAM R.; & KOCH, RICHARD. Abnormal galactose metabolism in man. In: Farrell, Gordon, ed. *Congenital Mental Retardation.* Austin, Texas, University of Texas Press, 1969, Chapter 5, 87-105.

Galactosemia is an inborn error of galactose metabolism which results from a deficiency in the activity of the enzyme galactose-1-phosphate uridyl transferase. Autosomal recessive inheritance is suggested because of familial occurrence, the involvement of siblings of both sexes, and apparent normality of parents. Of 43 children with diagnosed galactosemia, 90% had hepatomegaly, 76% had jaundice, 53% had anorexia and weight loss, 42% had cataracts, and 37% vomited excessively. Liver specimens had a common pattern which consisted of a rosette-like arrangement of liver cells around a dilated canaliculus that was often filled with bile pigment. Laboratory confirmation of clinical diagnosis should provide an estimation of transferase activity in erythrocytes. Treatment is by dietary therapy aimed at excluding galactose from the diet. Dietary treatment of the infant with galactosemia will save the child's life, and it has resulted in the reversal of most clinical features of galactosemia. An intellectual evaluation of 41 patients revealed that the IQs of 29 were within the normal range, 7 had IQs between 70 and 82, 2 had IQs between 55 and 69, and 3 were SMR. Two of the SMRs were essentially untreated, and the etiology of the MR of the third may be due to factors other than galactosemia. (33 refs.) *J. K. Wyatt.*

931 FINE, RICHARD N.; KOGUT, MAURICE D.; & DONNELL, GEORGE N. Intestinal absorption in type I glycogen storage disease. *Journal of Pediatrics*, 75(4):632-635, 1969.

The absorption responses of 8 children with type I glycogen storage disease to oral doses of mono- and disaccharides and to intravenous galactose and their fat intake and fecal excretion were studied. The results of oral glucose administration showed that glucose absorption was adequate. Serum fructose concentration increased following oral fructose loading, serum lactic acid concentration increased following administration of fructose and galactose, and blood glucose concentration increased after oral administration of maltose, lactose, and sucrose; however, there was no significant evidence of malabsorption. The results showed no disturbance in intestinal fat absorption. Glucose or maltose appears to be the dietary carbohydrate of choice in patients with type I glycogen storage disease. (15 refs.) - *M. G. Conant.*

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Los Angeles, California 90027

932 GALLI, CLAUDIO; KNEEBONE, GARRY M.; & PAOLETTI, RODOLFO. An inborn error of cerebroside biosynthesis as the molecular defect of the jimpy mouse brain. *Life Sciences*, 8(18):911-918, 1969.

Jimpy mice and littermate controls were treated with carbon-14 labeled galactose, and the brain lipid extracts were analyzed; the findings indicated the absence of cerebrosides and a reduced sulfatide content in the jimpy brain compared with control brain. This results in the impairment of myelin deposits. Jimpy is a sex-linked single gene mutant in which there is a lack of myelin. The percentage of cerebrosides in total brain lipids was found to be only a trace for jimpy brain compared to 6.4% for the control. The percentage of sulfatides found was 0.6% for jimpy brain compared to 1.4% for the control. The specific radioactivity calculated for cerebrosides was none for jimpy brain compared to 1070 DPM/mg lipid for control brain. For sulfatides, the activity was 137 DPM/mg for jimpy brain compared to 251 DPM/mg lipid for controls. Phosphatidylinositol, cardiolipin, phosphatidic acid, and ceramide were also measured and found to be in the same concentration in both groups. Sulfatides are formed in microsomes from cerebrosides and cerebrosides are also used in myelin formation. The small amount of cerebroside formed in jimpy brain is probably insufficient for the normal formation of myelin. The changes observed in the biosynthesis of other lipid classes appear to be a consequence of the specific defect in cerebroside formation. (15 refs.) *F. J. McNulty.*

*Adelaide Children's Hospital
Adelaide, Australia

933 CURTIN, VICTOR T.; JOYCE, EUGENE E.; & BALLIN, NORMAN. Ocular pathology in the oculo-cerebro-renal syndrome of Lowe. *American Journal of Ophthalmology*, 64(3)Part II:533-543, 1967.

Two similar cases demonstrate that the ocular pathology (manifest as cataracts and glaucoma) alone may be diagnostic of Lowe's oculo-cerebro-renal syndrome. Histopathologic studies showed that primary lens fibers had developed abnormally indicating a genetic defect by the fifth week of development. Chronologically, such a defect would occur before renal tissue was developed enough to permit amino acid build-up. Taut zonules associated with a small lens exert increased traction on the angle, ciliary processes and peripheral retina, and this explains the glaucoma. The question of a similar primary genetic defect or damage secondary to an error in amino acid metabolism in the etiology of the renal and cerebral manifestations of this syndrome remains to be resolved. (14 refs.) *E. L. Rowan.*

1638 Northwest Tenth Avenue
Miami, Florida 33136

934 OTHER, ANDERS. Congenital cataract, mental retardation and amino-aciduria. *Acta Ophthalmologica*, 46(3):404-412, 1968.

Groups of normal individuals (N=36), MR patients with congenital cataracts (N=55), and mentally normal patients with congenital cataracts (N=32) were compared for urinary excretion of amino acids. As a group, the MR patients showed a lower 24-hour excretion of taurine, glutamine, serine, alanine, histidine, and lysine than did the completely normal group, but they excreted a greater amount of glycine. The reason for this difference is unknown. (26 refs.) - *E. L. Rowan.*

Central Hospital
Nykobing Falster, Denmark

935 IRREVERRE, FILADELFO; MUDD, S. HARVEY; HEIZER, WILLIAM D.; & LASTER, LEONARD. Sulfite oxidase deficiency: Studies of a patient with mental retardation, dislocated ocular lenses, and abnormal urinary excretion of S-sulfo-L-cysteine, sulfite, and thiosulfate. *Biochemical Medicine*, 1(2):187-217, 1967.

A 2 1/2-year-old boy with severe neurological deficits, profound MR, and dislocated ocular lenses was found to excrete a large quantity of a compound subsequently identified as S-sulfo-L-cysteine in his urine. The presence of this compound, along with sulfite and thiosulfate anions suggested an inability to oxidize sulfite to sulfate and this was confirmed by the demonstrated absence of the enzyme sulfite oxidase. Although normal sulfur metabolism was demonstrated in the parents and 4 living siblings, 3 siblings had died in infancy and had had obvious central nervous system pathology. This constellation of symptoms probably represents an hereditary disorder of sulfur metabolism. (65 refs.) *E. L. Rowan.*

National Institute of Mental Health
Bethesda, Maryland 20014

936 THOMAS, GEORGE H. β-D-galactosidase in human urine: Deficiency in generalized gangliosidosis. *Journal of Laboratory and Clinical Medicine*, 74(5):725-731, 1969.

Activity levels of urinary β-D-galactosidase and N-acetyl-β-D-glucosaminidase can be easily ascertained by a colorimetric method, and the ratio of these enzymes was helpful in differentiating a patient with generalized gangliosidosis from others with mucopolysaccharidoses and normal and MR controls. Gangliosidosis was associated with very low levels of β-D-galactosidase and very high levels of N-acetyl-β-D-glucosaminidase. Patients with mucopolysaccharidoses (Hurler and Hunter syndromes) showed some reduction of β-D-galactosidase. The use of the ratio between different enzymes subjected to the same random extrinsic and intrinsic factors obviates the need for multiple sampling in the same patient. (15 refs.) - *E. L. Rowan.*

John F. Kennedy Institute
Baltimore, Maryland 21205

937 BRADY, ROSCOE O. Tay-Sachs disease. *New England Journal of Medicine*, 281 (22):1243-1244, 1969. (Editorial)

Tay-Sachs disease is an autosomal recessive disorder with MR and amaurosis and is found in infants from Ashkenazic Jewish parentage. Recent research has demonstrated that an enzyme which catalyzes the hydrolysis of *p*-nitrophenyl-β-D-N-acetylgalactosaminide and 4-methylumbelliferyl-β-D-galactosaminide is missing in tissues from patients with Tay-Sachs disease. This discovery is a vital step toward diagnostic screening and treatment of these patients. (7 refs.) - *S. Half.*

No address

938 KIHARA, HAYATO; KORNBLATT, JACK A.; McKEE, MARY E.; & LASSILA, ELTON L. Fructose phosphate aldolase and Tay-Sachs disease. *California Mental Health Research Digest*, 7(1):30-32, 1969.

The suggestion that Tay-Sachs disease is associated with decreased serum fructose phosphate aldolase activity could not be substantiated by examination of tissue culture cells, serum, or tissue. Tissue culture cells (skin fibroblasts) from patients with Tay-Sachs disease utilized both glucose and fructose and grew as well as did cells from normal controls. Serum enzyme activity and kidney, liver, and brain aldolase levels were the same in subjects with and without Tay-Sachs disease. (No refs.) - *E. L. Rowan.*

Pacific State Hospital
Pomona, California 91766

939 On the track of a mysterious killer. *Medical World News*, 10(38):18-18A, 1969.

Tay-Sachs disease (TSD), an heredity metabolic disorder which affects about 250 children a year, usually appears at age 6 months, and death always follows, usually by 40 months of age. About 85% of the victims are Jewish descendants from ancestors who lived near the pre-World War I Polish Russian border, and victims and parents have low serum levels of fructose-1-phosphate aldolase enzyme. An enzyme, hexosaminidase component A, is absent in the patients, and a current research team feels the core defect occurs in the catabolism of ganglioside GM_2. Research on the possibility of replacing the missing enzyme continues; however, the problem of the blood-brain barrier has to be solved before corrective treatment can be considered. (No refs.) - *M. Plessinger.*

940 KAMOSHITA, SHIGEHIKO; ARON, ALAN M.; SUZUKI, KINUKO; & *SUZUKI, KUNIHIKO. Infantile Niemann-Pick disease. A chemical study with isolation and characterization of membranous cytoplasmic bodies and myelin. *American Journal of Diseases of Children*, 117 (4):379-394, 1969.

Chemical analysis of membranous cytoplasmic bodies (MCB) and myelin of a patient with infantile Niemann-Pick disease indicated a marked increase of sphingomyelin (47.9-59.8% dry weight) and an increase of cholesterol (14.3-24.2%) in liver, spleen, and brain MCB. The major constituents of myelin were not significantly different from normal. The ganglioside pattern of the cerebral gray and white matter was abnormal and showed an increase in 2 fast moving monosialogangliosides. This increase is more prominent in isolated MCBs. Other abnormalities included an increase of nonpolar phospholipid in liver and spleen MCBs and glucocerebroside in cerebral MCBs. Fatty acid analysis of the sphingomyelin indicated normal composition in the spleen, a slight deficiency of long-chain fatty acids in the cerebral gray matter, and a greater deficiency of these acids in the liver and the cerebral white matter. (39 refs.) - *L. S. Ho.*

*Hospital of the University of Pennsylvania
Philadelphia, Pennsylvania 19104

941 HOOGHWINKEL, G. J. M.; *VAN GELDEREN, H. H.; & STAAL, A. Sphingomyelin of red blood cells in lipidosis and in dementia of unknown origin in children. *Archives of Disease in Childhood*, 44(234):197-202, 1969.

Red blood cell sphingomyelin from children with mucopolysacchridosis, sudanophilic leukodystrophy, metachromatic leukodystrophy, Niemann-Pick's disease, Gaucher's disease, or dementia of unknown origin was less than that found in normal children. Normal values were found in Ss with juvenile amaurotic idiocy and in children with cerebral damage due to an earlier purulent meningitis. Examination of red blood cell sphingomyelin may be a useful diagnostic tool and should precede the more drastic brain biopsy. (17 refs.) *L. S. Ho.*

*University of Leyden
Leyden, Netherlands

942 HULTBERG, BJÖRN; OCKERMAN, PER-ARNE; & ERICKSSON, ORJAN. Urinary amino acids in storage disorders: Mucopolysaccharidosis, Gaucher's disease and metachromatic leucodystrophy. *Metabolism: Clinical and Experimental*, 18(8):713-719, 1969.

The urinary excretion of amino acids was measured with an automated column chromatographic technique in 23 control children, 15 children with mucopolysaccharidoses, 4 with Gaucher's disease, and 3 with metachromatic leukodystrophy. Only morning urines were used, and since there were difficulties in separating serine and glutamine, it was necessary to calculate these 2 amino acids together. The excretion of serine and threonine was significantly elevated in patients with mucopolysaccharidosis type I (Hurler's disease) and type II (Hunter's syndrome), Gaucher's disease, and metachromatic leukodystrophy, but not in patients with mucopolysaccharidosis type III (Sanfilippo's disease) or type IV (Morquio's disease). Urinary excretion of tryptophan was increased in mucopolysaccharidosis types I and II. The elevated urinary excretion of these amino acids may be attributable to an increased splitting off by lysosomal enzymes of amino acids from the linkage regions of mucopolysaccharides, glycoproteins, and glycolipids. (17 refs.) *M. G. Conant.*

University Hospital
Lund, Sweden

943 VANCE, DENNIS E.; KRIVIT, WILLIAM; & *SWEELEY, CHARLES C. Concentrations of glycosyl ceramides in plasma and red cells in Fabry's disease, a glycolipid lipidosis. *Journal of Lipid Research*, 10(2):188-192, 1969.

Plasma and erythrocyte levels of 4 glycolipids were compared in 9 males with Fabry's disease (hemizygotes), 2 female relatives (heterozygotes), and 2 patients with Gaucher's disease. Galactosylgalactosylglucosyl ceramide (GL-3), which accumulates in tissue in Fabry's disease, also showed a three-fold elevation in plasma but not in erythrocytes. Heterozygotes showed an intermediate elevation. Patients with Gaucher's disease showed an elevation of glucosyl ceramide (GL-1) in both plasma and red cells. Study of these related sphingolipidoses may give further information about the synthesis and metabolism of glycolipids. (17 refs.) - *E. L. Rowan.*

*Michigan State University
East Lansing, Michigan 48823

944 GOLLANCE, ROBERT B.; & D'AMICO, ROBERT A. Atypical mucopolysaccharidosis and successful keratoplasty. *American Journal of Ophthalmology*, 64(4):707-716, 1967.

A boy with a form fruste of mucopolysaccharidosis (Hurler's disease) showed characteristic progressive corneal clouding and pigmentary retinal degeneration, and he received bilateral corneal transplants (keratoplasties) in order to improve vision. This boy showed typical psychomotor retardation, rhinitis, hepatomegaly, protruding tongue, and hirsutism, but although tissue biopsy material showed mucopolysaccharide accumulation, such accumulation could not be demonstrated in the urine. One transplant became edematous and cloudy as a result of immunologic rejection, but this was transplanted a second time and both transplants have remained clear. Cases previously classified as congenital hereditary corneal dystrophy may also represent form frustes of the mucopolysaccharidoses. (17 refs.) - *E. L. Rowan.*

737 Park Avenue
New York, New York 10021

945 ZELSON, J.; & DEKABAN, A. S. Biological behavior of lymphocytes in Hunter-Hurler's disease. *Archives of Neurology*, 20(4):358-361, 1969.

The presence of acid mucopolysaccharide (AMPS) inclusions in peripheral lymphocytes in Hunter-Hurler's syndrome was confirmed; however, the biological competence of these cells was not noticeably affected. The average percentage of lymphocytes with inclusions ranged between 17.4 and 35.1% (depending on the variant of the disease studied). The *in vitro* survival ability and the immunoglobulin production of the patients' lymphocytes were indistinguishable from that of normal Ss. No AMPS inclusions in lymphocytes were found in cerebral lipidosis, leukemia, cystic fibrosis, rheumatoid arthritis, or other neurological disorders. Toluidin blue staining for AMPS, therefore, is a good technique for diagnosing Hunter-Hurler's disease. (13 refs.)
L. S. Ho.

National Institutes of Health
Bethesda, Maryland 20014

946 DANKS, D. M.; CAMPELL, P. E.; KENNEDY, J. C.; & TAFT, L. I. The mucopolysaccharidoses and mental retardation. Paper presented at the annual meeting of the Australian Pediatric Society, 1967.

Six cases of the Sanfilippo variant of mucopolysaccharidosis had characteristics which included severe progressive mental degeneration, ataxia, aggressive behavior, and diarrhea (an unexplained feature). Coarse facial features and excessive hair were present, but less severe than in Hurler's syndrome. Screening tests on all Ss were positive. (1 ref.)
A. Huffer.

947 AHUJA, M. M. S.; CHOPRA, I. J.; & SRIDHAR, C. B. Sporadic cretinism and juvenile hypothyroidism. *Metabolism*, 18(6): 488-496, 1969.

Among 25 hypothyroid children in a nonendemic area in India, 9 of 12 patients with disease onset before the first year of life had moderate to severe MR, 1 of 3 patients with onset at 1 to 5 years of age had severe MR, and in patients with onset after 5 years of age, MR was not a dominant feature. Maldescent of the thyroid gland was observed in 44% of the children, and dryness of skin, hoarseness of voice, lethargy, constipation, and cold intolerance were found in 65-85% of the children. Blood protein-bound iodine levels and radioactive iodine uptake by the thyroid were below normal in 79% and 65% of the children, respectively. Retardation of gonadal development was present only in those Ss with long-standing and untreated hypothyroid states. Serum cholesterol level was high in 35% of the patients. (22 refs.)
L. S. Ho.

All-India Institute of Medical Sciences
New Delhi, India

948 MOURIZ, J.; RIESCO, G.; & USOBIAGA, P. Thyroid proteins in a goitrous cretin with iodide organification defect. *Journal of Clinical Endocrinology and Metabolism*, 29(7):942-947, 1969.

The thyroid gland of a 16-year-old girl with a congenital goiter and an iodide organification defect contained 3 soluble protein fractions on Sephadex G-200 chromatography; the first peak contained 2 proteins with sedimentation coefficients of 17 and 11.8, respectively, and could be precipitated with antihuman thyroglobulin rabbit serum. The second peak was hemoglobin; the third peak was a single protein with a sedimentation

coefficient of 4 and overlapped with the single 131_I peak. The radioactivity of the third peak was completely lost after dialysis for 48 hours. ^{131}I uptake by the thyroid was 53% 2 hours after oral administration. Intravenous injection of potassium thiocyanate reduced the thyroid radioactivity to 2.9% in one hour. Total thyroidectomy was performed 48 hours after the oral administration of 131_I. Only 1% of the radioactivity of the tissue homogenate was precipitable by trichloroacetic acid. (30 refs.) - *L. S. Ho.*

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Velazquez, 144
Madrid, Spain

949 COHEN, R. D.; & VINCE, F. P. Pseudohypoparathyroidism with raised plasma alkaline phosphatase. *Archives of Disease in Childhood*, 44(233):96-101, 1969.

Studies of a 15-year-old, slightly MR boy with pseudohypoparathyroidism showed that although his kidneys were insensitive to parathyroid hormone, his bones were sensitive. Bone disorders included subperiosteal erosions in the hands and abnormal femurs with widening of the epiphysial plates at the upper end of each femur and irregular metaphysis. A high serum phosphorus level was present (6.0 mg/100 ml) with renal phosphorus retention, and a high alkaline phosphatase level (31-51 KA units/100 ml) and a low calcium level (8.9-9.5 mg/100 ml) were also features of the disorder. Treatment with large doses of calciferol (50,000 units/day, orally) resulted in healing of the bone lesions and restoration of normal serum calcium and phosphorus levels. (22 refs.)
L. S. Ho.

London Hospital
London E.1, England

950 TEGELAERS, W. H. H. Inborn errors of metabolism of the thyroid gland. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism*. (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 23-47.

There are 2 metabolically active thyroid hormones--tetraiodothyronine and triiodothyronine--which are synthesized from diiodotyrosine and monoiodotyrosine by enzymatic processes within the thyroid gland. Possible enzyme deficiencies include: absence or deficiency of the "trapping" enzyme; peroxidase deficiencies; deficiencies of deiodinases; or coupling enzyme deficiencies. All enzyme deficiencies are accompanied by goiter, and all cause the thyroid gland to vary in function from normal. The diagnosis of hypothyroidism in infancy or childhood is usually easy; however, the administration of iodine-containing drugs or contrast media or the presence of circulating maternal hormones may cause difficulties. In making the diagnosis, the data to consider include: the patient's appearance and past history; the growth curve for height, weight, and skeletal development; the achilles tendon reflex; the basal metabolic rate; the serum cholesterol level; the urine creatinine/creatine ratio; the protein-bound iodine tests; and the radioactive iodine serum uptake test. (10 refs.) - *A. J. del Rosario.*

951 DODION, J.; & PARMENTIER, R. Syndrome de Marfan avec insuffisance mitrale, arrieration mentale et agenesie ovarienne (Marfan syndrome with mitral insufficiency, mental retardation, and ovarian agenesis). *Acta Paediatrica Belgica*, 23(1):17-26, 1969.

Clinical observation of a female child (CA 23 mos) revealed mitral insufficiency due to enlargement of the mitral valve, height above the ninty-seventh percentile, myopia, generalized hypotonia, pectus excavatum, dorsolumbar scoliosis, and an abnormal EEG pattern consistent with the diagnosis of Marfan syndrome. Mental development had been normal until the age of 13 months, after which it deteriorated rapidly, and epileptic convulsions had occurred since this age. Death occurred at 4.5 year of age, and autopsy revealed ovarian agenesis. (10 refs.)
M. G. Conant.

Universite de Bruxelles
Brussels, Belguim

952 YOULTON, R.; KAPLAN, S. L.; & *GRUMBACH, M. M. Growth and growth hormone. IV. Limitations of the growth hormone response to insulin and arginine and of the immunoreactive insulin response to arginine in the assessment of growth hormone deficiency in children. *Pediatrics*, 43(6):989-1004, 1969.

On the basis of growth hormone (GH) response to insulin-induced hypoglycemia and to arginine infusion in 60 children with growth retardation, the children were classified into 3 groups: 19 children with GH values of 7 mμg/ml or more to both stimuli (group 1); 18 children with peak GH values of less than 3 mμg/ml to both stimuli (group 2); and 23 children with a blunted GH response of 3-7 mμg/ml to one or both stimuli. The short

stature of patients in group 1 was considered to be of non-endocrine origin, while 12 of the patients in group 2 had the physical stigmata of GH deficiency. In some patients in group 3, evidence of a partial or less severe form of GH deficiency was found, but in 17 patients in this group, the impaired growth was not attributable to GH deficiency. Blood glucose levels following insulin administration were significantly lower in group 2 at all sampling periods, and changes in serum insulin following arginine infusion were not a useful discriminatory index between the 3 groups. The diagnosis of isolated GH deficiency can only be established with a high degree of probability after these 2 types of stimulation tests. (35 refs.) - *M. G. Conant.*

*University of California
San Francisco, California 94122

953 FERRIER, PIERRE E.; & STONE, E. FRANKLIN, JR. Familial pituitary dwarfism associated with an abnormal sella turcica. *Pediatrics*, 43(5):858-865, 1969.

Two sisters (10 and 11 yrs of age) who presented with growth failure, MR, a tendency to hypoglycemia, and deficiencies of thyroid-stimulating and adrenocorticotropic hormones were found to be hypopituitaric and to have very small sella turcica located in abnormal sphenoid bones. Both parents were normal and nonconsanguineous, and a third sister was normal. This type of familial pituitary dwarfism is believed to be unique and may be transmitted as an autosomal recessive trait. (29 refs.) - *L. S. Ho.*

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Seattle, Washington 98105

954 ROWE, RICHARD D.; & COOKE, ROBERT E. Vitamin D and craniofacial and dental anomalies of supravalvular stenosis. *Pediatrics*, 43(1):1-2, 1969.

Excess maternal intake of vitamin D, excess postnatal intake of the vitamin, reduced tolerance to the vitamin, and altered regulation of calcium all appear to play a role in the pathogenesis of infantile hypercalcemia and supravalvular aortic stenosis. (8 refs.) *L. S. Ho.*

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Baltimore, Maryland 21205

955 FRIEDMAN, WILLIAM F.; & MILLS, LOREN F. The relationship between vitamin D and the craniofacial and dental anomalies of the supravalvular aortic stenosis syndrome. *Pediatrics*, 43(1):12-18, 1969.

The offspring of rabbits given large amounts of vitamin D during pregnancy were found to have severe malocclusion of the teeth, peculiar facies, premature closure of the cranial bones, strabismus, odd shaped ears, and low birth-weight; these characteristics were comparable to those of the supravalvular aortic stenosis syndrome in man. The cranial, facial, and dental anomalies of this syndrome appear to be related to an altered metabolism of vitamin D during pregnancy. (18 refs.) *L. S. Ho.*

University of California School of Medicine
La Jolla, California 92037

956 GOLDMAN, HERBERT I.; *FREUDENTHAL, ROSLYN; HOLLAND, BEATRICE; & KARELITZ, SAMUEL. Clinical effects of different levels of protein intake on low-birth-weight infants. *Journal of Pediatrics*, 74(6):881-889, 1969.

A total of 304 infants with birth-weights below 2,000 gm were assigned at random to either of 2 diets which provided either 3-3.6 or 6-7.2 gm/kg/day of protein. Systematic clinical observations were made in the premature nursery until the infant's weight reached 2,200 gm. The infants fed the higher protein diet had more fever and lethargy, and poorer nipple feeding; however, they had higher plasma protein levels and less edema than infants with low protein intake. Differences in weight gain between the 2 groups were small and may reflect the presence of more edema on the lower intake. Follow-up to determine any late effects of dietary protein variation is in progress. (34 refs.) *M. G. Conant.*

*Long Island Jewish Hospital
New Hyde Park, New York 11040

957 ROSENBAUM, ARTHUR L.; CHURCHILL, JOHN A.; SHAKHASHIR, ZEKIN A.; & MOODY, RICHARD L. Neuropsychologic outcome of children whose mothers had proteinuria during pregnancy. A report from the collaborative study of cerebral palsy. *Obstetrics and Gynecology*, 33(1):118-123, 1969.

Fifty-three infants of 51 mothers who had severe proteinuria during the last half of

pregnancy performed less adequately on neurological and psychological tests than control infants from mothers matched for race, sex, hospital of birth, and socioeconomic status. Mean Bayley Mental scores at 8 months of age for the experimental infants was 77.7 compared with 81.2 for control infants; the Binet IQ score was 84.3 at 4 years of age compared with 100.6 for controls. A tendency toward low birth-weight was noted in the study group and, along with the impairment in psychological functions, suggests intrauterine protein deprivation with consequent brain development impairment. Maternal proteinuria during pregnancy can be used as an indicator of suboptimal neuropsychological development in offspring, and control of the proteinuria might result in improvement of intellectual potential. (13 refs.) - *L. S. Ho.*

National Institutes of Health
Bethesda, Maryland 20014

958 SYBULSKI, S.; & TREMBLAY, P. C. Pathways of glucose metabolism in human placentas from normal pregnancies and from pregnancies associated with intrauterine fetal malnutrition. *American Journal of Obstetrics and Gynecology*, 103(8):1148-1153, 1969.

Thirty-five placentas from pregnancies which terminated in the birth of normal babies and 19 placentas from pregnancies associated with intrauterine fetal malnutrition were incubated separately with glucose labeled with carbon-14 in the 1- and 6- positions and the amount of radioactivity in the respiratory carbon dioxide was determined. The placentas from cases of intrauterine fetal malnutrition produced 30 and 44% less labeled carbon dioxide/unit weight of tissue from glucose labeled in the 1- and 6-positions, respectively, than those from the normal group. The differences were not statistically significant unless the total placenta weight is taken into account, in which case the total amount of glucose utilized is considerably less in the placentas associated with fetal malnutrition. The results also show that both the hexose monophosphate shunt and Embden-Meyerhof plus Krebs cycle pathways are operative and that the Krebs cycle activity is relatively more affected than the hexose monophosphate shunt in the experimental placentas. (20 refs.) *M. G. Conant.*

Royal Victoria Hospital
Montreal, Quebec, Canada

959 PAGE, ERNEST W. Human fetal nutrition and growth. *American Journal of Obstetrics and Gynecology*, 104(3):378-387, 1969.

Fetal metabolism, placental transfer, alterations of maternal metabolism affecting the fetus, maternal nutrition, and factors which regulate or interfere with fetal growth are summarized. Glucose supplies essentially all the energy required by the fetus, while fetal insulin appears to be the primary growth regulating hormone. All nutrients, ions, and gases required for fetal nutrition are transferred by diffusion across the placenta. During pregnancy, the mother progressively utilizes lipids which are not transferred to the fetus in large quantities and relies less on carbohydrates which are the main fetal fuels; her metabolism shifts towards that of the fasting state. Maternal malnutrition rather than undernutrition is probably responsible for an increased frequency of such complications as fetal anomalies, maternal anemias, eclampsia, and abruptio placentae. Undernutrition of the fetus and fetal growth retardation are probably due to a limitation of the surface area for exchange and/or a limitation of maternal blood flow/unit of exchange surface. (56 refs.) - *M. G. Conant.*

University of California School of Medicine
San Francisco, California 94117

960 MAXWELL, G. M.; ELLIOT, R. R.; & HOLT, A. B. Nutritional studies of Australian aboriginal children. Paper presented at the first annual meeting of the Paediatric Research Society of Australia, 1968.

In surveys carried out in 1965 and 1967 on aboriginal children, no cases of kwashiorkor or any serious serum constituent deviations were found. A high incidence of abnormal lactose tolerance was noted. Human growth hormone levels were normal. Head circumferences were below normal. (2 refs.) *A. Huffer.*

961 WINICK, MYRON. Malnutrition and brain development. *Journal of Pediatrics*, 74(5):667-679, 1969.

The relation between nutritional deprivation and brain development has been demonstrated in studies of physical and chemical brain growth and studies of brain function. Animal experiments have shown the rat to have a "critical period" covering the first 3 weeks of life. Malnourishment during this period results in decreased brain weight, decreased

number of neurones, and decreased myelin synthesis. This was especially marked when rats were "doubly deprived" both prenatally and postnatally, and changes were not reversible. The only comparable human studies show reduced brain weight, decreased cells, and decreased head circumference if deprivation occurs during the first 6 months of life. Functional studies in man show apathy and lethargy as a result of malnutrition, but the MR which is seen cannot be attributed solely to malnutrition as it is only one of the deprivations associated with poverty. Infant feeding must obtain high priority on a worldwide basis as these undernourished children can look forward to a lifetime of marginal function and will create an environment in which their children, too, will be malnourished. (44 refs.) - *E. L. Rowan.*

New York Hospital
New York, New York 10021

962 The great American paradox. *Medical World News*, 10(48):24-27, 1969.

Because prenatal and early childhood undernutrition are thought to impair later physical and mental development, it comes as a shock to realize that at least 10% of Americans are seriously undernourished. In addition, probably 25% of Americans are overnourished. Malnutrition is no longer associated only with the underprivileged. American dietary habits have become increasingly deficient since 1960, and this is true of infants, children, and adults in the highest socioeconomic groups as well as those in the lowest. A connection between nutrition and mental development has been indicated in recent research; EEG patterns are abnormal in protein-deficient children but become normal when protein intake is increased. When poor nutrition is coupled with adverse environmental conditions, intelligence will probably be impaired. Much more information and research on nutrition needs to be done; however, a national policy to guarantee every American an adequate diet would seem to be in order. (No refs.) - *M. Drossman.*

963 Reversing the effects of malnutrition. *Medical World News*, 10(50):48A, 1969.

Early malnutrition does not necessarily cause permanent mental and developmental retardation if children are adequately nourished later. A study of 40 children treated for kwashiorkor showed that their long-term development matched that of normal siblings. A comparison of "small for dates" babies (2,000-2,700 gm) with normal babies (3,250-3,800 gm) at the age of 4 years showed no significant difference in IQ. The "small for dates" babies were thought to suffer from intrauterine malnutrition; however, in this study, as in the first study, such factors as the effects of environmental and genetic conditions were not considered. (No refs.) *E. F. MacGregor.*

964 New evidence links malnutrition, mental growth. *Journal of the American Medical Association*, 210(1):17-18, 1969.

Findings presented at the Eighth International Congress of Nutrition (Prague, Czechoslovakia) showed a direct relationship between severe malnutrition and brain damage in early infancy. However, since most of the data came from the study of animals (whose brain development is different from the human brain), more research involving human Ss is needed. (No refs.) - *E. F. MacGregor.*

965 RENDON, ROBERTO; HURTADO, JUAN JOSE; & ARATHOON, MARIA CHRISTINA. The effect of malnutrition on the physical and mental development of children. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 16, p. 262-288.

A comparison of 18 malnourished hospitalized children (CA below 1 yr; protein and calorie malnutrition state - II to III degree) with 18 controls revealed that malnourished Ss evidenced noticeable deficiencies in anthropometric measurements, development, and functioning levels. All Ss had normal deliveries; no history of infections, trauma, or toxicity that could affect the central nervous system; and no history of previous chronic neurological disease. Evaluations of each case included developmental history, family history, feeding habits, and socioeconomic situation as well as pediatric, neurological, psychological, and opthamological assessments. Other investigations were on blood serum calcium, phosphorus, alkaline phosphatase, cholesterol, total proteins, and albumin/globulin ratio, and on osseous maturity and electroencephalography. Diameters of the cranial circumference and height were significantly lower for malnourished Ss, and these Ss never attained the expected curves for their ages. Deficiencies in all areas of infant mental development and especially in

the development of language and social-personal attitude persisted even after nutritional recovery was satisfactory. All malnourished Ss came from bad to very bad socioeconomic situations and broken homes. Many of their parents functioned at a below average intelligence level. The deficiencies of the malnourished group cannot be attributed solely to reduced protein and calorie intake because of multiple interrelated factors, such as lack of environmental stimulation, extreme poverty, poor parent education, and parent intelligence. (47 refs.) - *J. K. Wyatt.*

966 PRITCHARD, JACK A.; WHALLEY, PEGGY J.; & SCOTT, DANIEL E. The influence of maternal folate and iron deficiencies on intrauterine life. *American Journal of Obstetrics and Gynecology*, 104(3):388-396, 1969.

Serum folate levels in 54 cases of abruptio placentae were very similar to those in the late pregnancy control group; megaloblastic changes occurred with equal frequency in both groups. Only one of 54 offspring whose mothers had overt megaloblastic anemia caused by folate deficiency was seriously malformed. These results and those previously published by other workers suggest that maternal folate deficiency short of that which causes overt anemia in the mother, at least, is unlikely to contribute significantly to pregnancy wastage and that routine folic acid supplementation during pregnancy would not reduce pregnancy complications and improve reproductive performance. The rate of iron transfer from iron-deficient mothers to their fetuses was measured in 2 cases prior to hysterotomy. The transport mechanisms of the human placenta effectively transferred large amounts of iron to the fetus at the expense of the mother. Despite this, severe maternal iron deficiency is often accompanied by other pregnancy complications. (27 refs.) *M. G. Conant.*

University of Texas Southwestern Medical School
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New growths

967 SARAN, NIRMAL; & WINTER, FRANK C. Bilateral gliomas of the optic discs. *American Journal of Ophthalmology*, 64(3)Part II:607-612, 1967.

Bilateral optic disc gliomas were demonstrated at autopsy in a young woman with generalized neurofibromatosis (von Recklinghausen's disease). Tumors were found throughout the skin, gastrointestinal tract, and central nervous system. In addition to the optic nerve head tumors, optic atrophy and exposure keratitis were demonstrated in both eyes. Bilateral optic disc involvement had not been previously recorded in this disease. (5 refs.) - *E. L. Rowan.*

Stanford University School of Medicine
Palo Alto, California 94304

968 SPENCER, WILLIAM H.; & BORIT, ADAM. Diffuse hyperplasia of the optic nerve: In von Recklinghausen's disease. *American Journal of Ophthalmology*, 64(3)Part II:638-642, 1967.

Asymmetrical hyperplasia of the optic nerves was an incidental finding at autopsy in a man with generalized von Recklinghausen's disease. There had been no visual complaints during life. Microscopic examination of the optic nerves showed hyperplasia of glial (astrocytic) elements, proliferation of arachnoid cells (meningeal), and an increase in connective tissue elements. The differentiation of such hyperplasia from a glioma as a cause of enlargement of the optic foramen cannot be accomplished clinically. (15 refs.) *E. L. Rowan.*

University of California
San Francisco, California 94122

969 GROVER, WARREN D.; & HARLEY, ROBISON, D. Early recognition of tuberous sclerosis by funduscopic examination. *Journal of Pediatrics*, 75(6, Part I):991-995, 1969.

Tuberous sclerosis is characterized by an early onset of MR, seizures, intracranial calcifications, skin lesions (especially adenoma sebaceum), and retinal phakomas. In 2 of 9 patients with this disease, the ocular tumors were the first objective finding to appear after the MR and seizures; however, none appeared before age 3. Retinal lesions

were hyaline or cystic nodules in central and/or peripheral distribution. The 3 fundi studied by flourescein staining were avascular. Frequent fundoscopic examinations may aid in the early diagnosis of this disease. (6 refs.) - *E. L. Rowan.*

Temple University Health Center
Philadelphia, Pennsylvania

970 MAHALEY, M. S., JR.; DAY, EUGENE D.; & BIGNER, DARELL. Problems inherent to the *in vivo* localization of anti-brain tumor antibodies. *Annals of the New York Academy of Sciences*, 159(Article2):451-460, 1969.

An animal model used to investigate the relations between the proteins of brain, brain tumors, blood, and cerebrospinal fluid (including the localization of anti-brain tumor antibodies) is described. As early as 3 weeks following percutaneous injection of Schmidt-Ruppin rous sarcoma virus into the midportion of the right cerebral hemisphere of 48-hour-old puppies, tumor cells could be detected in the cerebrospinal fluid, and most of the animals became symptomatic and died at 4-6 weeks of age. The tumors were either multiple, pedunculated intraventricular tumors or solitary, invasive surfact tumors, and an obstructive hydrocephaly responsible for death occurred in 20 of 21 cases. Peak blood levels following injection of labeled canine γ-globulin were reached after 18-24 hours in normal dogs, but only after 4-5 days in the dogs with obstructive hydrocephaly. Labeled normal rabbit γ-globulin and labeled rabbit viral antibody remaining 3 hours after injection in ventricles of dogs with obstruction was 52 times greater than the amount remaining in the nonobstructed dogs. This animal model system is ideal for the investigation of the potential usefulness of cerebrospinal fluid as an injection site for localizing antibodies as well as of the problems inherent in the *in vivo* localization of anti-brain tumor antibodies. (30 refs.) *M. G. Conant.*

Duke University School of Medicine
Durham, North Carolina 27706

971 BRAY, PATRICK F.; ZITER, FRED A.; LAHEY, M. EUGENE; & MYERS, GARTH G. The coincidence of neuroblastoma and acute cerebellar encephalopathy. *Journal of Pediatrics*, 75(6, Part I):983-990, 1969.

Both a neuroblastoma and acute cerebellar encephalopathy (ataxia, chaotic eye movements, and dementia) were observed in 3 young children, and a search of the literature revealed 6 additional cases. In no case was there evidence of cerebellar metastasis of the neural crest tumor. Neuroblastomas do have a very high rate of spontaneous regression, however, and it is suggested that a "silent" tumor in the cerebellum might cause the dysfunction and leave residual psychomotor signs after regression. If children presenting with cerebellar encephalopathy were examined for neuroblastoma, this hypothesis might be validated. (32 refs.) - *E. L. Rowan.*

University of Utah College of Medicine
Salt Lake City, Utah 84112

972 LINGLEY, J. F.; SAGERMAN, R. H.; SANTULLI, T. V.; & WOLFF, J. A. Neuroblastoma: Management and survival. *New England Journal of Medicine*, 277(22):1227-1230, 1967.

Sixteen of 50 children with neuroblastoma and 5 of 6 children with ganglioneuroblastoma survived for more than 3 years after diagnosis. Complete excision of the tumor was accomplished in 10% of those with neuroblastomas and 50% of those with ganglioneuroblastomas. Prognosis is best in children under one year of age. (14 refs.) - *A. Huffer.*

No address

973 ZÜLCH, K. J. The newest development of experimental induced tumors of the central nervous system. *Journal de Genetique Humaine*, 17(3/4):511-529, 1969.

Tumors can be experimentally induced in the central nervous system (CNS) of animals by the single or chronic administration of carcinogenic substances; however, the lack of uniformity of tumor classification hinders statistical comparison of the results. Methyl-nitroso-urea (MNU) given in a single dose gave a low tumor incidence in the CNS, but caused tumors in several other body organs. Multiple small peroral doses of MNU caused an incidence of neurogenic tumors 10 times that of tumor in other organs. Mother animals treated with ethyl-nitroso-urea during pregnancy had tumor-bearing offspring which indicates that carcinogenic substances can cross the placenta. CNS tumors were produced transplacentally in 92% of the offspring,

while 2% occurred in other organs. A modification of tumor classification based upon the malignancy of the tumor was developed; the final malignancy of an intracranial tumor was determined by the grade of malignancy (benign, semibenign, malignant, semimalignant) of the tumor growth and by factors which determine clinical malignancy--action on vital centers (hypothalmus), action on arteries, action on the cerebrospinal fluid pathway, and herniation. (79 refs.) - *F. J. McNulty*.

Max Planck Institute for Cerebral Research
Cologne, West Germany

Prenatal influence

974 ROBOZ, P.; & PITT, D. Studies on 782 cases of mental deficiency. Part IV. *Australian Paediatric Journal*, 5(3):137-148, 1969.

Further diagnostic breakdown was made of 782 consecutive admissions to an institution for the MR. Eight cases showed hydrocephalus alone, and another 7 had myelodysplasia associated with the hydrocephalus. All had neurological symptoms. There were 6 patients with craniostenosis; 5 of whom had malformations and 3 spastic quadriplegia. Eleven cases had hereditary syndromes, and of these, 10 belonged to 5 families with several affected members. There were 4 dwarfs in the series (15% growth retardation), and in addition to moderate to severe MR, 3 of these also had neurological signs. Six patients had chromosomal abnormalities other than Down's syndrome. (26 refs.) - *E. L. Rowan*.

Children's Cottages
Kew, Victoria, 3101, Australia

975 WILLOUGHBY, H. W.; HENRY, J. S., JR.; & ARRONET, G. H. Amniotic fluid in a case of multiple congenital anomalies. *Canadian Medical Association Journal*, 101(6):354-355, 1969.

Analysis of the amniotic fluid from a case with craniosynostosis, Alpert's syndrome, polysyndactyly, and pyloric stenosis showed a peak optical density difference at 450 nanometers. A similar peak has been reported in badly affected Rh-sensitized pregnancies and in cases with anencephaly or duodenal atresia. The chromagen has been postulated to be fetal bilirubin or to result from impaired circulation of amniotic fluid through the fetal gut. Maternal subicteric hyperbilirubinemia in this case suggests that the chromagen might have been of maternal origin. (7 refs.) - *E. L. Rowan*.

Royal Victoria Hospital
Montreal 2, Quebec, Canada

976 PARKER, DAVID A.; & SKALKO, RICHARD G. Congenital asymmetry: Report of 10 cases with associated developmental abnormalities. *Pediatrics*, 44(4):584-589, 1969.

Ten patients with total congenital asymmetry were found in a review of 860,000 inpatient records from the New York Hospital-Cornell Medical Center (1932-1966). Congenital asymmetry was often associated with other anomalies including MR, dysgenesis, bilateral cryptorchism, septum pellucidum cysts, high-arched palate, unusual dermal markings, seizures, Beckwith's syndrome, hamartomatous lesions, Cushing's syndrome, and bilateral medullary sponge kidneys. Six of the 10 patients had abnormalities of the genitourinary system; however, no single alteration of the genitourinary or any other system consistently accompanied the asymmetry in these Ss. Research is now being conducted on mouse embryos to determine the mechanism involved in the production of asymmetry; however, it seems likely that fusion of 2 separately fertilized miotic products may occur, and thus a chimera with unequal regulative ability in each half is formed. (20 refs.) *F. J. McNulty*.

Peter Bent Brigham Hospital
Boston, Massachusetts 02115

977 SACK, ROBERT A. The large infant. A study of maternal, obstetric, fetal, and newborn characteristics; including a long-term pediatric follow-up. *American Journal of Obstetrics and Gynecology*, 104(2):195-204, 1969.

A survey on 766 large infants (birth-weight 10 lbs or more) from 84,017 deliveries (1947-1956) indicated that complications were very frequent and included infant shoulder dystocia (10%), maternal diabetes (2.9%), maternal toxemia (14%), and perinatal death (7.2%). Of 200 survivors followed for up to 5 years of age, 23 had neurological complications (MR, convulsive disorder, and cerebral palsy), one had Down's syndrome, 26 had asthma, and 9 had died before the age of 7 years. A program which gave special attention to suspected cases of large infants was initiated after 1956. A comparison of the first delivery series and deliveries reviewed in 1966 showed that infant shoulder dystocia dropped from 10% to 6.0% and maternal hemorrhage from 13.0% to 8.0%. Perinatal mortality decreased to 3%. A prolonged second stage of labor should cause the attending physician to suspect the birth of a large infant. It is suggested that an elderly father or one who is 10 years older than the mother may be an etiological factor in these births. (9 refs.) - *L. S. Ho.*

12520 East Washington Boulevard
Whittier, California 90602

978 LARSON, STEPHEN L.; WILSON, ROBERT B.; & TITUS, JACK L. Monoamniotic hydrocephalic twins with survival: Report of a case with cytogenetic study. *Obstetrics and Gynecology*, 34(3):419-421, 1969.

Monoamniotic twins both with normal female karyotypes were noted to have congenital hydrocephalus and meningomyelocele at birth. One twin died at 7 days of age but the other was reported to be alive at one year of age after a shunt procedure for ventricular drainage. Survival of both monoamniotic twins is unusual because of the high risk of entanglement of 2 fetuses in a single amniotic sac. (27 refs.) - *E. L. Rowan.*

Mayo Clinic
Rochester, Minnesota 55901

979 Study suggests hydrocephalus has viral origin. *Journal of the American Medical Association*, 210(3):441, 1969.

Animals inoculated with reovirus type 1 developed obstructive hydrocephalus; therefore, hydrocephalic infants should be tested for antibodies to myxoviruses, paramyxoviruses, and reoviruses. (No refs.) - *E. F. MacGregor.*

980 Studies of hydrocephalus. *Physical Therapy*, 49(10):1127, 1969.

An increased resistance to cerebrospinal fluid (CSF) absorption appears to be a major factor in the pathogenesis of hydrocephalus. A group of children with hydrocephalus required a considerably higher CSF pressure to absorb chemotherapeutic agents than did a group of children with normal CSF pathways. (No refs.) - *E. L. Rowan.*

981 ANDERSSON, H.; & ROOS, B. -E. 5-Hydroxyindoleacetic acid in cerebrospinal fluid of hydrocephalic children. *Acta Paediatrica Scandinavica*, 58(6):601-608, 1969.

The level of 5-hydroxyindoleacetic acid (5-HIAA) in CSF obtained at lumbar or ventricular puncture was determined in 191 children ranging in age from newborn to 10 years, including 89 patients with verified hydrocephalus and 102 who were being investigated for other diseases. There was a significant increase in the level of 5-HIAA in the lumbar CSF of hydrocephalic children compared with non-hydrocephalic children, and levels in the latter group decreased successively during the first year to adult levels. Premature infants had higher levels of 5-HIAA in CSF than full-term babies. A decreased level of 5-HIAA was observed postoperatively in cases of surgery with a functioning shunt. These results corroborate the theory that an increased level of 5-HIAA is due to decreased elimination of the acid metabolite from CSF. (28 refs.) - *M. G. Conant.*

Sahlgrenska Sjukhuset
Goteborg, Sweden

982 LIN, P. F. Radioiodinated serum albumin cisternography in diagnosis of incisural block and occult hydrocephalus. *Radiology*, 90(1):36-41, 1968.

From a study of 15 Ss with incisural block and occult hydrocephalus, it was found that, in these cases, radioiodinated serum albumin cisternography will show the radioactivity to appear in the basal cisterns 3 hours after lumbar injection. By 24 hours, the scan will show the gradual migration of the radioactivity to the subarachnoid spaces. When there is radioactivity in the cistern and none over

the brain convexity, then incisural block can be determined as the cause of the hydrocephalus. (No refs.) - *A. Huffer.*

No address

983 SAHAR, ABRAHAM; *HOCHWALD, GERALD M.; SADIK, ABDUL R.; & RANSOHOFF, JOSEPH. Cerebrospinal fluid absorption. In animals with experimental obstructive hydrocephalus. *Archives of Neurology*, 21(6):638-644, 1969.

Cerebrospinal fluid (CSF) absorption in kaolin-induced hydrocephalic cats, as measured by ventricle-to-ventricle perfusion, began at a pressure of 7 cm H_2O which was about 13 cm H_2O higher than in normal cats. The artificial CSF injected contained inulin and ^{131}I albumin. The bulk absorption of CSF calculated from inulin clearance increased linearly with the pressure above the threshold point in both normal and hydrocephalic cats; however, it was less dependent on the pressure in hydrocephalic cats. The flow of CSF from the ventricle to blood as measured by ^{131}I albumin uptake in blood showed a similar pressure dependence. The initial pressure may be regarded as the pressure necessary to overcome the pressure on the blood side of the blood-CSF barrier. This pressure and CSF absorption are probably controlled by the sizes of channels through which the fluid flows and by the magnitude of the absorptive apparatus. These variables explain the difference between normal and hydrocephalic animals. (15 refs.) - *L. S. Ho.*

*New York University Medical Center
New York, New York 10016

984 JARPE, SVEN; & HEBBE, BO. Treatment of hydrocephalus. *Lancet*, 1(7597):728, 1969. (Letter)

Accurate placement of the distal end of the venous-shunt catheter which was connected to a pressure-recording unit was accomplished in 56 children and 32 adults, and no repositioning was needed. (2 refs.) - *A. Huffer.*

Regionsjukhuset
Linkoping, Sweden

985 RABOW, LENNART. Treatment of hydrocephalus. *Lancet*, 1(7599):840, 1969. (Letter)

Percutaneous subclavian-vein catheterization was used to correct the obstruction of the flow in the venous catheter--the most common cause for shunt malfunction in hydrocephaly. Eight patients (CAs 5 to 54 yrs) were operated on by this technique; in the follow-up period (3 to 19 mos), 2 patients developed complications. In one patient, the catheter kinked outside the vessel and was easily straightened, while in the other, the catheter was expelled from the vessel. This may be a good alternative method to replace an obstructed catheter when it is difficult to introduce a venous catheter through the jugular vein. (3 refs.) - *L. S. Ho.*

Regionsjukhuset
Linkoping, Sweden

986 DENNY, FRANK; *FRANCE, NORMAN; LLOYD, GLYN; & SINCLAIR, LEONARD. A dicephalic monster (Dicephalus isodiplopterata). *Clinical Pediatrics*, 8(1):27-31, 1969.

A dicephalic infant with one placenta, one umbilical cord containing 3 vessels, and one amniotic sac was delivered at 38 weeks gestation by cesarean section. Each head was normal and complete, and the 2 necks were joined above the thoracic inlet. The trunks were fused, and there were 2 arms and 2 legs. Facial movements for each head were different even though the faces were similar in appearance. Sneezes occurred at different times for each head, and the rhythm and rate of breathing for each twin varied. The infant died about one hour after delivery. Laboratory data showed 2 vertebral columns, and there was duplication of some organs including the thymus gland, the respiratory tract, the foregut, and the pancreas. Some incomplete duplication was present in the heart, great vessels, midgut, and liver. The terminal gut, genitourinary tract, spleen, and adrenal glands were single and normal; however, the right testis was undescended. The chromosome pattern was normal. The mother was a gravida 3, and had had an unremarkable prenatal history; however, the maternal age of 39 years may have been a factor in the etiology. Incomplete twinning is not uncommon in lower animals and can be induced by ovum aging. (9 refs.) - *B. Bradley.*

*Queen Elizabeth Hospital for Children
London E 2, England

987 ANDERSEN, S. RY; BRO-RASMUSSEN, F.; & TYGSTRUP, I. Anencephaly related to ocular development and malformation. *American Journal of Ophthalmology*, 64(3)Part II:559-566, 1967.

Forty eyes from 21 infants with all degrees of anencephaly were examined pathologically. Grossly, they were of normal size and shape. Microscopic examination showed the pigment epithelium of the retina and sensory epithelial cells to be normal, while there was hypoplasia and/or atrophy of the optic ganglion, nerve-fiber layer of the retina, and axons in the optic nerve. Embryologically, these changes are secondary to cerebral malformations. Atypical findings, such as uveal coloboma, retinal dysplasia, corneal dermoids, and malformations of the chamber angle may be secondary to the cerebral malformations or due to direct teratogenic action. (11 refs.) *E. L. Rowan.*

Tagensvej 18
Copenhagen, Denmark

988 CARTER, C. O.; & LAURENCE, K. M. Anencephalus and spina bifida. *British Medical Journal*, 2(5653):381, 1969. (Letter)

Pair concordance of anencephalus and spina bifida in a series of twin births is compatible with data suggesting that 20% of monozygotic cotwins and 6% of dizygotic cotwins are also affected. Heritability may be more accurately determined in twin series when the type of twinning is reliably established. (1 ref.) - *E. L. Rowan.*

Institute of Child Health
London W.C. 1, England

989 Natural history of spina bifida. *Lancet*, 2(7614):266-267, 1969. (Letter)

The bright picture given in regard to the prognosis of spina bifida cases is questioned. The severely handicapped children who constitute the majority of such cases are not publicized in the popular press; however, modern medicine is causing the accumulation of more and more children who are very severely handicapped and intelligent. More information about survival rates as related to the degree of mental and physical disability is needed. (No refs.) - *L. E. Hays.*

990 STARK, GORDON. Pudendal neurectomy in management of neurogenic bladder in myelomeningocele. *Archives of Disease in Childhood*, 44(238):698-704, 1969.

Twelve children (CAs 10 mos to 8 yrs 2 mos; mean 2 yrs 9 mos) who had had closure operations for myelomeningocele within a year of birth had bilateral pudendal neurectomies performed to relieve bladder outflow obstruction; in 10 of the 12, bladder drainage was improved. In 9 patients, a whole cystometrogram pressure tracing was at a lower level after the neurectomy; this suggests that the outflow resistance was reduced. In all but one patient, the intravesical pressure required to achieve voiding by manual expression was reduced. In 9 patients, the mean bladder volume drainage fell from 55.2 ml to 15 ml, and in 7 Ss, there was an alteration in the configuration of the bladder outlet. In one child, the anal reflex was temporarily lost during the operation, and in one other patient, the anal reflex became less brisk after the operation. The assessment of bladder function should be made within the first 3 months of life to prevent irreparable damage to the upper urinary tract. (15 refs.) *F. J. McNulty.*

University of Edinburgh
Edinburgh EH 9 1UW, Scotland

991 HERZBERG, SHIRLEY B.; PERSKY, LESTER; & NULSEN, FRANK E. Urinary diversion by cutaneous uretero-ileostomy. In children with myelomeningocele. *American Journal of Diseases of Children*, 118(6):876-885, 1969.

Renal damage from hydronephrosis and chronic urinary tract infection in children with myelomeningocele can be prevented or ameliorated by a cutaneous uretero-ileostomy. Of 31 children with myelomeningoceles who underwent this operation and who were followed for 2 months to 7 years, one died 8 months after surgery, 5 had early postoperative complications which required surgery, and 9 had late complications requiring surgery. Although the surgical operation is associated with a significant complication rate, the morbidity in children who have had the operation is reduced from previous levels. Cutaneous uretero-ileostomy controls incontinence and stops the progressive upper urinary tract dilation often found in these children. The most common complications of this surgery include urine leakage from the loop, small intestine obstruction, evisceration of stoma, ureteroileal obstruction, loss of kidney

function, and peritonitis secondary to urine leakage at the ureteroileal anastomosis. (52 refs.) - *F. J. McNulty.*

University Hospitals of Cleveland
Cleveland, Ohio 44106

992 WARBURG, METTE. *Norrie's Disease. A Congenital Progressive Oculo-Acoustico-Cerebral Degeneration.* Acta Ophthalmologica: Supplementum 89. Copenhagen, Denmark, Ejnar Munksgaard, 1966, 147 p. $8.82.

Extensive survey and genealogical investigation revealed a total of 35 cases of Norrie's disease in 6 families (3 in Denmark and 3 in Sweden). This form of congenital blindness is inherited as a sex-linked recessive. In infancy, a retrolental mass (pseudoglioma) is observed. Progressive degenerative ocular changes culminate in a small, shrunken eye which cannot be differentiated from other types of blindness without documentation of the pre-existing tumor in infancy. In addition to being blind, 20 of these 35 individuals were MR and approximately 1/3 was known to have hearing difficulties. Histologic study of 2 cases showed malformations of the sensory cell layer of the retina, optic nerves and tract, and lateral geniculate body. A world literature search revealed an additional 106 cases in 16 families. The pathogenesis of Norrie's disease is unknown. (13-item bibliog.; 108 refs.) - *E. L. Rowan.*

CONTENTS: Case Material; Clinical Analysis; Histological Studies; Pathogenesis; Genetic Analysis; Survey of the Literature; Differential Diagnosis.

993 MONAHAN, ROBERT HUGH; HILL, CHARLOTTE WEEKS; & VENTERS, HOMER D. Multiple choristomas, convulsions and mental retardation as a new neurocutaneous syndrome. *American Journal of Ophthalmology*, 64(3)Part II: 529-532, 1967.

The third reported case of a syndrome consisting of linear nevus sebaceous, convulsions, and MR occurred in a 4-year-old girl. Neurocutaneous involvement, particularly of the conjunctivae, was most severe in this case. Biopsies of the raised yellow lesions covering the face and neck showed hyperplastic sebaceous glands, atypical apocrine glands, and immature hair follicles. These cases underscore the difficulty in classification and determination of etiology in the group of congenital heredofamilial hamartial diseases. (6 refs.) - *E. L. Rowan.*

1573 University Avenue
St. Paul, Minnesota 55104

994 WENT, L. N.; DE GROOT, W. P.; SANGER, RUTH; TIPPETT, PATRICIA; & GAVIN, JUNE. X-linked ichthyosis: Linkage relationship with Xg blood groups and other studies in a large kindred. *Annals of Human Genetics*, 32(4):333-345, 1969.

In a large Dutch kindred, the gene locus responsible for ichthyosis was confirmed to be very close to the locus for the Xg blood groups, and the recombination fraction calculated by the standard lod score method was 0.115 with 90% probability limits of 0.06 and 0.24. These figures agree with those obtained from ichthyotic Israeli families. The severity of the condition varied considerably among the affected males and was not related to age. The lesions seemed to ease during the warm summer months. In 29 female heterozygotes, 6 had dry scaling skin on the legs, often with a network appearance. Two members of the family were MR, and another member had Down's syndrome. Two X-linked characteristics, hemophilia and deuteranomaly, were found in the family; however, no linkage information could be derived. (10 refs.) *L. S. Ho.*

University of Leiden
Leiden, Netherlands

995 JAY, BARRIE; BLACH, R. K.; & WELLS, R. S. Ocular manifestations of ichthyosis. *British Journal of Ophthalmology*, 52(3):217-226, 1968.

Ocular manifestations were found to be as diagnostic in the classification of ichthyosis in 62 patients as were the genetic pattern and dermatological manifestations. Ichthyosis of the lids was most common in autosomal recessive forms. Ectropion was seen only in the recessive non-bullous ichthyosiform erythrodermia. Corneal changes (multiple, deep, grey, punctate stromal opacities) were seen in sex-linked ichythyosis and ichthyosis vulgaris and were age-related. Superficial corneal changes appeared secondary to ectropion and exposure. (42 refs.) *E. L. Rowan.*

Moorfields Eye Hospital
London, E.C. 1, England

996 GERBER, AARON H.; SKALA, ROBERT; & HOMBERG, ROY. Cranio-thoraco-omphalopagus: A case report. *Southern Medical Journal*, 62(8):978, 1969.

Female twins joined at the cranium, thorax, chest, and abdomen were delivered at 33 weeks gestation and lived only a few minutes. The 20-year-old mother had no history of multiple pregnancy or treatment for infertility or infection. (1 ref.) - *A. Huffer.*

Government Hospital
Zefat, Israel

997 FINLEY, SARA C.; FINLEY, WAYNE H.; & MONSKY, DAVID B. Cataracts in a girl with features of the Smith-Lemli-Opitz syndrome. *Journal of Pediatrics*, 75(4):706-707, 1969.

Bilateral cataracts were found in an 8-year-old girl who also had many features of the Smith-Lemli-Opitz syndrome. This would be the second case of this syndrome associated with cataracts, and the third case found in a female. There was no consanguinity indicated in the family; however, the mother had been on thyroid medication, and the father had received Myoline for seizure control. Chromosome numbers and patterns have been normal in cases of the Smith-Lemli-Opitz syndrome, and they were normal in this patient. Comparison of more cases may reveal a definite pattern of this syndrome and give better insight into the method of transmission. (3 refs.) *L. E. Hays.*

University of Alabama
Birmingham, Alabama 35233

998 DONLAN, MICHAEL A.; MURPHY, JOHN J.; & BRAKEL, CARL A. Ellis-van Creveld syndrome associated with complete situs inversus. *Clinical Pediatrics*, 8(6):366-368, 1969.

Total situs inversus associated with the Ellis-van Creveld syndrome was found in a 6 and 3/4-year-old EMR boy. The patient showed no overt evidence of congenital heart disease. Hypoplasia of teeth and incomplete infusion of the upper lip at the midline were present. (14 refs.) - *L. S. Ho.*

Children and Youth Clinic
Spokane, Washington

999 LEE, FRED A.; & KENNY, F. M. Skeletal changes in the Cornelia de Lange syndrome. *American Journal of Roentgenology*, 100(1):27-39, 1967.

Six new cases of Cornelia de Lange syndrome (CAs 4 to 10 yrs) were found to have abnormalities including short stature, MR, microcephaly, syndactyly of the second and third toes, clinodactyly of the fifth finger, hypoplasia of the first metacarpal bones, small upturned nose with a flat bridge, micrognathia, heavy eyebrows, and proximal insertion of the thumbs. No consistent biochemical or chromosomal aberrations were noted. (No refs.) - *A. Huffer.*

No address

1000 JACOBY, GEORGE W.; & BONHAM, ROGER D. De Lange's Amsterdam syndrome: A case report. *Ohio State Medical Journal*, 65(5): 497-500, 1969.

A 9-year-old white girl with characteristic features of de Lange's syndrome (SMR, dwarfism, microcephaly, hypertrichosis, and typical facies including confluent eyebrows, carp-like mouth, and small nose with saddle-shaped nose bridge) was found to have incomplete formation of the left forearm and hand. Familial and birth histories were noncontributory, and none of 4 live siblings were abnormal. The left forearm lacked the ulna and was fixed in an acute flexion because of cutaneous webbing; the left hand was rudimentary with a partial thumb and one finger. In addition, minor finger and toe anomalies were found. No chromosomal abnormalities were noted. (1 ref.) - *K. Jarka.*

Apple Creek State Hospital
Apple Creek, Ohio 44606

1001 SILBIGER, MARTIN L.; & PETERSON, CARL C. Sjogren's syndrome: Its roentgenographic features. *American Journal of Roentgenology*, 100(7):554-558, 1967.

Roentgen studies were performed on 42 Ss (40 females and 2 males) with Sjogren's syndrome. Chest X-rays showed 14 with reticular infiltrates. Sialography of 33 Ss showed changes in 31 with ductal and alucola ectasin seen. Of the 37 cervical spines examined, 8 showed abnormal atlanto-axial separation. (No refs.) *A. Huffer.*

No address

1002 SATRAN, LEON; SHARP, HARVEY L.; SCHENKEN JERALD, R.; & KRIVIT, WILLIAM. Fetal neonatal hepatic steatosis: A new familial disorder. *Journal of Pediatrics*, 75(1): 39-46, 1969.

Three siblings died during the neonatal period from fatty metamorphosis of the liver with severe hemorrhage of unknown etiology. The infants did not respond to treatment with vitamin K, fibrinogen, blood transfusion, antibiotics, intravenous electrolytic infusions, or restricted galactose intake. The possibility of an unknown toxin in the mother was excluded since a normal boy was born between 2 affected siblings. This may be a new inborn error of fat metabolism. (13 refs.) *L. S. Ho.*

University Hospitals
Minneapolis, Minnesota 55455

1003 BABSON, S. GORHAM; & BRAMHALL, JAMES L. Diet and growth in the premature infant: The effect of different dietary intakes of ash-electrolyte and protein on weight gain and linear growth. *Journal of Pediatrics*, 74(6):890-900, 1969.

Twenty-nine healthy infants with birth-weights of 1,500 gm or less were divided into 4 groups and placed on one of 4 isocaloric test diets differing in ash and protein content. Increases in weight and body length for the 2 time-periods of 7-28 days and 28-42 days and linear rates of tibial growth for the period of 14-42 days were calculated. Infants receiving the higher protein diet (5.25 gm/kg/day as opposed to 2.25 gm/kg/day when fed at 150 ml/kg/day) showed significant increases in all 3 measures of growth, while those fed the higher ash diet (0.9 gm/kg/day as opposed to 0.45 gm/kg/day) only showed significant weight gains, and this effect was limited to the first weeks of life. These findings and those reported by other authors suggest that the increase in weight produced by high-ash content diets in small, premature infants is not true growth, and the best single measure of growth is the increase in length. (15 refs.) - *M. G. Conant.*

3181 Southwest Sam Jackson Park Road
Portland, Oregon 97201

1004 BOY, J. -L.; LAFONT, C.; & VILLEMINCLOG, L. Devenir pondero-statural et psycho-moteur du premature: Resultats d'une enquete effectuee aupres d'anciens prematures de 7 a 9 ans (The weight, stature, and psychomotor future of premature children: Results of a survey on former premature children aged 7-9 years.) *Revue d'Hygiene et de Medecine Sociale*, 16(8):753-783, 1969.

Sixty children (CA 7-9 yrs) who were born prematurely in 1958-1960 were surveyed with respect to size, intelligence, and psychomotor ability. Height and weight varied inversely with birth-weight and length of gestation, but they were satisfactory and became progressively better with age (except for the girls, who continued to show a weight deficit by age 9). None showed systemic neurologic problems or epilepsy, while 22% had ocular troubles. The IQ scores ranged from 64 to 111, with the majority in the range 70-100. Questioning of parents revealed frequent delays in psychomotor development (walking, talking, and sphincter control), and the IQ scores were often indicative of greater scholastic achievements than were actually made. Personality disturbances and physical and psychic instability (lack of attention and extreme fatigability) were frequently found. Prophylactic measures are recommended. (11 refs.) - *M. G. Conant.*

Centre Hospitalier Universitaire
63 Clermont-Ferrand, France

1005 YAO, A. C.; *LIND, J.; TIISALA, R.; & MICHELSSON, K. Placental transfusion in the premature infant with observation on clinical course and outcome. *Acta Paediatrica Scandinavica*, 58(6):561-566, 1969.

Blood volume was measured in 73 premature and 10 small-for-date term infants following early (within 15 seconds of birth) or late (within 1-5 minutes of birth) cord clamping at birth; the results were compared with those of 45 normal full-term infants. Blood volume, red cell volume, and venous hematocrit were significantly higher in the late-clamped group, indicating that placental

transfusion occurs when clamping of the umbilical cord is delayed. The amount of placental transfusion (in terms of red cell volume/kg body weight) was less in premature infants weighing under 2,001 gm than in normal full-term infants and premature infants weighing more than 2,001 gm. The incidence of idiopathic respiratory distress syndrome was highest in premature infants weighing less than 2,001 gm, and mortality from this syndrome was highest in the late-clamped group weighing less than 2,001 gm. (25 refs.) - *M. G. Conant.*

*Karolinska Sjukhuset
Stockholm 60, Sweden

Gross brain disease (postnatal)

1006 AMMANN, A. J.; GOOD, R. A.; BIER, D.; & FUDENBERG, H. H. Long-term plasma infusions in a patient with ataxia-telangiectasia and deficient IgA and IgE. *Pediatrics*, 44(5, Part 1):672-676, 1969.

A 2.5-year-old girl with ataxia-telangiectasia and deficiencies of immunoglobulin (Ig)A and IgE was given infusions of plasma from a single donor over a 3-year period. The IgA levels reached following plasma infusion were similar to those of the donor; however, no IgA could be demonstrated in the saliva. IgE was detected in the skin 5 days after infusion. No significant deleterious effects could be shown, and there was some evidence of a beneficial effect, as recurrent sinopulmonary infections were significantly controlled. Antibodies to IgA were demonstrated in the patient, but no transfusion reactions were observed. (21 refs.) - *M. G. Conant.*

Variety Club Heart Hospital
Minneapolis, Minnesota 55455

1007 VAN BOGAERT, LUDO; & MARTIN, LILIANE. Degeneresences systematisees des voies optiques geniculo-calcarines dans les heredoataxies spinocerebelleuses (Systemic degeneration of the optical geniculo-calcarine pathway in spinocerebellar hereditary ataxia). *Journal de Genetique Humaine*, 17(3/4)275-280, 1969.

Two sisters, born of a consanguineous marriage, were affected with Friedreich's ataxia and systemic degeneration of the geniculocalcarine segment of the optical pathway. The disorder started at 17 and 18 years, and was characterized by leg weakness, progressive scoliosis, muscle atrophy, and mild mental deficiency. Neurological and ophthalmological investigations found similar pathological changes in both sisters, and the optic pathway degeneration may be an integral part of this abiotrophic syndrome. (5 refs.) *F. J. McNulty.*

Born-Bunge Research Foundation
Antwerp, Belgium

1008 PINCUS, J. H.; ITOKAWA, Y.; & COOPER, J. R. Enzyme-inhibiting factor in subacute necrotizing encephalomyelopathy. *Neurology*, 19(9):841-845, 1969.

In a female child (CA 12 mos) with subacute necrotizing encephalomyelopathy, pyruvate metabolism by the white blood cells was normal; however, deproteinized extracts of the patient's blood and samples of her urine and spinal fluid inhibited TPP-ATP phosphotransferase--the enzyme that catalyzes the reversible conversion of thiamine pyro-phosphate (TPP) to thiamine triphosphate (TTP). In brain tissue obtained shortly after death, no TTP was found (in contrast to the normal brain), although pyruvate dehydrogenase, transketolase, and α-ketoglutarate dehydrogenase levels were comparable in both. The lack of TTP in the brain, due to the enzyme-inhibiting factor, may be reflected in the neurological symptoms of this disease. (17 refs.) - *M. G. Conant.*

Yale University School of Medicine
New Haven, Connecticut 06510

1009 RAHN, ELSA KERTESZ; YANOFF, MYRON; & TUCKER, SAMUEL. Neuro-ocular considerations in the Pelizaeus-Merzbacher syndrome: A clinicopathologic study. *American Journal of Ophthalmology*, 66(6):1143-1151, 1968.

Ocular histopathology is described for the first time in a boy with Pelizaeus-Merzbacher

disease, a slowly progressive diffuse cerebral sclerosis apparently inherited as an X-linked recessive. The optic nerve showed the widespread demyelination and secondary gliosis characteristic of the changes throughout the central nervous system. Retinal ganglion cells were markedly reduced in number, and the retinal nerve fiber layer was considerably thinned. Ophthalmologic examination during life had not been remarkable. (34 refs.) *E. L. Rowan.*

Meadowbrook Hospital
East Meadow, New York 11554

1010 AMBLER, MARY; POGACAR, SRECKO; & SIDMAN, RICHARD. Lhermitte-Duclos disease (granule cell hypertrophy of the cerebellum). Pathological analysis of the first familial cases. *Journal of Neuropathology and Experimental Neurology*, 28(4):622-647, 1969.

Two cases are reported of the rare Lhermitte-Duclos disease (which is characterized by megalencephaly, enlarged neuron somas in the cerebellar granular layer, and enlarged myelinated axons in the molecular layer). The first case (a 22-year-old male) had a large head from infancy, MR, and signs of increased intracranial pressure, and he died following a posterior fossa exploration. Autopsy revealed an enlarged brain and a mass of hypertrophied folia with myelination in the outer part of the molecular layer. Electron microscope examination showed enlargement of granule cell somas, hypertrophy and myelination of granule cell axons, loss of Purkinje cells, and loss of granule cells. The second case (the first patient's 51-year-old mother) died with metastatic carcinoma of the breast; however, postmorten examination of her enlarged brain revealed cerebellar abnormalities like those of her son, although milder. The disease must involve either excessive cell proliferation with essentially normal histogenesis or a generalized cell hypertrophy in embryonic or early postnatal life in order to account for the large brain found in 19 of the 36 reported cases. (48 refs.) - *M. G. Conant.*

Rhode Island Hospital
Providence, Rhode Island

1011 PHILIPPART, MICHEL; & VAN BOGAERT, LUDO. Cholestanolosis (cerebrotendinous xanthomatosis). A follow-up study on the original family. *Archives of Neurology*, 21(6): 603-610, 1969.

The cerebellum of a woman with cerebrotendinous xanthomatosis (CTX) contained 6.9% free and esterified cholestanol in the total lipid fraction, whereas it was not detected in normal controls and only barely detectable in Niemann-Pick and Wolman's disease. The patient was a paternal cousin of the first reported case of CTX in 1937. The main clinical features of CTX are juvenile cataracts, dull normal intelligence, and involvement of cerebellum and spinal cord long tracts. The disease has a slow and progressive development of the neurological symptoms. Tendinous xanthomas from 2 other cases of CTX showed increased cholestanol contents, but less striking than in the brain. Increased cholestanol level was also found in the tendon and serum in a newly suspected case. CTX can be considered as a generalized defect in cholestanol metabolism. (31 refs.) - *L. S. Ho.*

UCLA School of Medicine
Los Angeles, California 90024

1012 HOWARD, RUFUS O. Familial dysautonomia (Riley-Day syndrome). *American Journal of Ophthalmology*, 64(3)Part I:392-398, 1967.

Ocular findings were important in establishing the diagnosis of familial dysautonomia in a Jewish infant who died at the age of 10 months. In addition to hypotonia, lethargy, mottled skin, inability to coordinate suck and swallow, and hyporeflexia, there was an absence of tearing, corneal anesthesia, and corneal erosions. Further studies showed a supersensitivity of the pupil to methacholine. Postmortem examination was suggestive of a decreased respiratory rate in eye tissues. There appeared to be an increase in the size of the iris sphincter and spotty loss of dilator fibers. The etiology of the eye findings in this disorder may be a partial loss of innervation due to changes (cytoplasmic vacuoles) in autonomic neurones. (29 refs.) *E. L. Rowan.*

333 Cedar Street
New Haven, Connecticut 06510

Psycho-environmental

1013 YOUNG, WHITNEY M., JR. Poverty, intelligence and life in the inner city. *Mental Retardation/MR*, 7(2):24-29, 1969.

In the poor and Negro populations of large cities, impaired intelligence levels are more commonly found than in middle-class or affluent populations. The causes of this MR are myriad and include malnutrition (both intrauterine and in infancy), high levels of disease, exposure to lead, accidents due to poor or inadequate supervision, emotional instability in the family unit, inadequate mental stimulation, and "unavailable" mothers. In addition, achievement tests used in the United States are oriented toward white, middle-class children and often measure concepts with which poor children are not familiar. Many middle-class teachers expect poor or Negro children to do poorly, and a self-fulfilling prophecy is instituted. Nevertheless, many of these children are quite well adapted to their own (deprived) environment; an environment in which a white, middle-class child would not function as well. A number of new programs should be started in the inner city and should include: family planning clinics; maternal, prenatal, and postnatal care clinics; more Head Start programs; more medical centers; and new achievement and intelligence tests which are not culturally biased. (No refs.) - *M. D. Nutt.*

No address

1014 DUHL, LEONARD J. Linkage between poverty and retardation. *Mental Retardation/MR*, 7(2):30-32, 1969.

MR should be considered as only one symptom of broader social ills which must be remedied. Human resources need to have a higher priority in funding; quite often social ills are ranked in importance after highway building. Universities, housing authorities, and medical programmers must become involved in serving the inner city, thus solving human problems and thereby preventing much of the MR in this country. (No refs.) - *M. Plessinger.*

University of California
Berkeley, California 94721

1015 ALDRICH, ROBERT. Breaking the links between poverty and mental retardation. *Mental Retardation/MR*, 7(2):33-35, 1969.

MR is a problem which demands a national plan with specific goals, an empathy for man in relation to environment, and a dual mission of prevention and special education. Education should begin at age 18 months, day care centers should be established, national birth control and parent education programs should be developed, and human development information centers should be built. National concern about MR is leveling off, and professionals must become political activists. (No refs.) - *M. Plessinger.*

President's Committee on Mental Retardation
Washington, D. C.

1016 FREEDMAN, DAVID A. The role of early mother/child relations in the etiology of some cases of mental retardation. In: Farrell, Gordon, ed. *Congenital Mental Retardation.* Austin, Texas, University of Texas Press, 1969, Chapter 15, p. 245-261.

The environmental conditions of maternal deprivation and isolation during infancy and early childhood appear to result in a syndrome characterized by failure of either production or use of growth hormone, MR, lack of capacity to make attachments, and flattened affect. The syndrome occurs even when the child does not receive direct cruel treatment. Both the quality and amount of early postpartal experience appear to play a crucial role in physical and mental development. It should not be assumed that biochemical abnormalities provide direct evidence for an inborn error of metabolism, since environmental factors can result in failure to use or elaborate the growth hormone. Case history data support the view that familial MR can be attributed to experiential rather than genetic factors. (13 refs.) - *J. K. Wyatt*

1017 NEWTON, GRANT; & LEVINE, SEYMOUR, eds. *Early Experience and Behavior. The Psychobiology of Development*. Springfield, Illinois, Charles C. Thomas, 1968, 784 p. $28.50.

Studies of the comparative psychobiology of development demonstrate the high potential of the organism for developmental modification and the interaction of genetic and environmental factors in this capacity for change. The effects of a variety of pre- or postnatal experimental procedures on emotionality, maturation, later stress reactions, learning ability, and social behavior are considered. This research spans the phylogenetic scale and includes information of critical periods, imprinting in birds, the effects of early deprivation on human and subhuman subjects, and methodologies used in research on early experience. A neuropsychological theory attributes deficiencies in early learning of dogs to the effects of restricted environments. Research on brain chemistry and anatomy modifications in rats and their relation to enriched or impoverished experiences are summarized. Theoretical data on the effects of maternal deprivation are analyzed, and a perceptual deprivation hypothesis is proposed to explain the detrimental effects on development of unhealthy institutional environments. A cross-species analysis of the effects of early deprivation in mammals reveals common needs for stimulation and attachment to others. Of 20 propositions in this analysis, none was contradicted, 13 received direct confirmation, 5 have had indirect support, and 2 are inconclusive. This book would be of interest to psychologists, biologists, psychiatrists, educators, neurologists, physiologists, chemists, zoologists, behavioral scientists, endocrinologists, and nutritionists. (1,617 refs.) - *J. K. Wyatt.*

CONTENTS: An Epigenetic Interpretation of the Imprinting Phenomenon (Moltz); Species Specificity and Early Experience (King): Early Experience: A Neuropsychological Approach to Heredity-Environment Interactions (Melzack); Experience and Temperament in Human Neonates (Bridger & Birns); Some Methodological Implications of the Research on "Early Handling" in the Rat (Schaefer); A Consideration of the Usefulness of the Critical Period Hypothesis as Applied to the Stimulation of Rodents in Infancy (Denenberg); Hormones in Infancy (Levine & Mullins); Maturation of the Neuroendocrine Response to Stress in the Rat (Schapiro); Modifying Brain Chemistry and Anatomy by Enrichment or Impoverishment of Experience (Rosenzweig, Krech, Bennett, & Diamond); Adaptive and Homeostatic Mechanisms in the Development of Physiologically Mature and Immature Organisms (Archavsky); In Search of the Engram: In the Nursery (Meier); An Analysis of Generalized Behavior in the Stimulus-Deprived Organism (Ganz); The Process of Primary Socialization in the Dog (Scott); Early Experience and the Social Development of Rhesus Monkeys and Chimpanzees (Mason, Davenport, & Menzel); Effects of Modified Maternal Care in the Sheep and Goat (Moore); Children in Restricted Environments (O'Connor); Perceptual Deprivation in Institutional Settings (Casler); Early Deprivation in Mammals: A Cross-Species Analysis (Bronfenbrenner).

1018 MELZACK, RONALD. Early experience: A neuropsychological approach to heredity-environment interactions. In: Newton, Grant; & Levine, Seymour, eds. *Early Experience and Behavior. The Psychobiology of Development*. Springfield, Illinois, Charles C. Thomas, 1968, Chapter III, p. 65-82.

The contributions of heredity and environment appear to collaborate to determine the qualities of nerve impulse patterns that subserve perception and response. Dogs reared in restricted cages from infancy to maturity evidence: extreme activity after removal from restriction cages and placement in a new environment; abnormal perceptual behavior to visual, auditory, olfactory, and noxious stimuli; and difficulty inhibiting irrelevant responses. The restricted environment drastically reduced but did not eliminate sensory input. The neural model suggested by these findings is one in which failure to use prior experience to filter out irrelevant data results in excessive arousal which interferes with the normal and acquired mechanisms that normally influence the selection of cues for adaptive responses. The finding that irrelevant aimless activity appears to disappear in normally reared dogs long before it begins to decrease in dogs reared in a restricted environment suggests that early environment sets the stage for later learning in dogs. (40 refs.) - *J. K. Wyatt.*

1019 ROSENZWEIG, MARK R.; KRECH, DAVID; BENNETT, EDWARD L.; & DIAMOND, MARIAN C. Modifying brain chemistry and anatomy by enrichment or impoverishment of experience. In: Newton, Grant; & Levine, Seymour, eds. *Early Experience and Behavior. The Psychobiology of Development*. Springfield, Illinois, Charles C. Thomas, 1968, Chapter IX, p. 258-298.

Clear differences in brain chemistry were exhibited between rats reared in an environmental complexity and training (ECT) atmosphere

and rats reared in an isolated (IC) environment from age 25 to 105 days. ECT animals evidenced heavier cerebral cortexes and slightly decreased weight in the rest of the brain, increased total acetylcholinesterase (AChE) activity in the cortex, increased total cholinesterase activity in the cortex, and increased cortical depth measured on anatomical preparations (all significant beyond the .01 level). Cortical effects were largest and most reproducible in the visual sample and smallest in the somesthetic sample of the cortex. Experiments with adult animals exposed to similar ECT and IC conditions indicate that from the age of weaning on, there is no critical period for environmental effects on brain tissue weight and AChE activity. ECT and IC environments affected problem-solving abilities, and after 30 days of ECT experience, the reversal discrimination problem-solving ability of former IC animals significantly improved. These data allow for the definite rejection of the hypothesis that the relatively greater cortical weight and cerebral AChE activity found in ECT animals represents acceleration of brain development among ECT animals and retarded development among IC animals. Hypotheses that cannot be rejected at this time and on which further testing is being conducted attribute changes in brain chemistry which appear to be related to environment to neuronal branching and multiplication of glia or to synaptic and glial changes. Rather small changes in AChE activity can have functional consequences. (39 refs.) - *J. K. Wyatt.*

1020 O'CONNOR, NEIL. Children in restricted environments. In: Newton, Grant; & Levine, Seymour, eds. *Early Experience and Behavior. The Psychobiology of Development.* Springfield, Illinois, Charles C. Thomas, 1968, Chapter XVI, p. 530-572.

The main theories on the effects of maternal deprivation are instinct, learning, and stress theories. The fairly elaborate theories in this area are based on inadequate data and nonsystematic clinical impressions. The evidence on the effects of early childhood deprivation, such as restricted environment, indicates that long-term effects on sensory, social, or emotional learning cannot be assumed unless the deprivation itself is long-term. Rehabilitation studies demonstrate that unless deprivation occurs over a period of years, children tend to improve and that the origins of some backward or emotionally incomplete children cannot be attributed to deprivation. The conditions for permanent effects of deprivation appear to be long-term learning and conditioning. Recent trends in animal studies have emphasized physiological explanations of behavior and an environmental modification of behavior explanation rather than one based on innate reaction patterns. Present evidence suggests that a learning theory approach to mother-child interactions is at least as desirable as an instinct theory approach. There is a move away from investigations of the mechanisms of maternal deprivation and toward a basic exploration of mother-child relations. To obtain definitive data on maternal deprivation, studies should compare the effects of 2 separate situations under short-term and long-term conditions on children with a variety of different temperaments. (115 refs.) - *J. K. Wyatt.*

1021 CASLER, LAWRENCE. Perceptual deprivation in institutional settings. In: Newton, Grant; & Levine, Seymour, eds. *Early Experience and Behavior. The Psychobiology of Development.* Springfield, Illinois, Charles C. Thomas, 1968, Chapter XVII, p. 573-626.

The perceptual deprivation hypothesis is preferable to the maternal deprivation hypothesis for the study of retardation in physical, intellectual, and/or emotional development found in children reared in unhealthy institutions. Although various forms of malfunction are found in children raised in such institutions, there is no evidence to support the hypothesis that these are the result of maternal deprivation or deprivation of love. Animal and human studies relate retarded development to early tactile deprivation, restricted environment and deprivation of exploratory behavior, deprivation of visual stimulation, restriction of activity and manipulatory needs, paucity of auditory stimulation, and understimulation of all important sensory modalities. The perceptual deprivation hypothesis can be applied to specific symptoms usually attributed to maternal deprivation, and it receives support from learning and neurophysiological functioning theories. Perceptual needs predominate over social needs during the infancy and post-infancy periods. There is no evidence that perceptual or social stimulation is best administered by a loving mother or mother surrogate, and it may be that institutional rearing is preferable to family rearing in some respects. (259 refs.) - *J. K. Wyatt.*

1022 ELMER, ELIZABETH; GREGG, GRACE S.; & ELLISON, PATRICIA. Late results of the "failure to thrive" syndrome. *Clinical Pediatrics*, 8(10):584-589, 1969.

Long-term follow-up of children hospitalized for "failure to thrive" without an organic etiology revealed continued poor growth, intellectual deficits, and behavior disorders. Fifteen patients, most of low socioeconomic status, were evaluated from 3 to 11 years after their initial hospitalization. Nine continued to fall short of standard growth norms. Six were mildly MR and 4 were moderately MR. Seven had significant behavioral difficulties. Families in most instances were disrupted, there were several children born close together, and siblings commonly had developmental and behavioral problems. Mothers had multiple somatic and psychiatric problems and did not express concern about their children's progress. Growth failure based on a poor mother-child relation should be preventable, and imaginative social programs are necessary in order to involve and support families where this occurs. (14 refs.) - *E. L. Rowan.*

University of Pittsburgh
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1023 CHASE, RICHARD ALLEN. Biologic aspects of environmental design. Role of biology in planning man's environment. *Clinical Pediatrics*, 8(5):268-274, 1969.

An inadequately structured environment can deprive man of experiences essential to normal growth and development. Man does not develop his full intellectual capacity if he is deprived of sensory input or the opportunity for exploration and play in infancy. New environments can be created to prevent deficiencies or overcome defects. MR children with limited language skills still may be encouraged to develop nonverbal methods of communication. When many clinical examples of MR are shown to have been preventable, there is no excuse for overlooking environmental manipulation. (55 refs.) *E. L. Rowan.*

Johns Hopkins Hospital
Baltimore, Maryland 21205

1024 KERR, GEORGE R.; CHAMOVE, ARNOLD S.; & HARLOW, HARRY F. Environmental deprivation: Its effect on the growth of infant monkeys. *Journal of Pediatrics*,, 75(5):833-837, 1969.

Seventy-seven infant rhesus monkeys were raised under conditions of total social isolation but normal dietary intake, and despite the development of behavioral abnormalities, there was no evidence of growth retardation. Although strict comparison with human development is probably not justified, this finding suggests that "deprivation dwarfism" probably does not occur on the basis of emotional deprivation and study should be directed toward unreported dietary deficiencies. (18 refs.) - *E. L. Rowan.*

University of Wisconsin Medical Center
Madison, Wisconsin 53706

MEDICAL ASPECTS--CONVULSIVE DISORDERS

1025 GIBBERD, F. B. Epilepsy. *British Medical Journal*, 4(5678):281-284, 1969.

Treatment of epilepsy involves controlling seizures and assisting the patient's maximal social adjustment. Phenytoin and phenobarbitone are drugs of choice for both grand mal and focal epilepsy, and doses should be the minimum necessary to control all seizures. Ethosuximide is the drug of choice for petit mal. Single attacks and infrequent nocturnal epilepsy should be investigated clinically but not treated. Epilepsy during drowsiness is best treated with small doses of phenytoin so as not to increase drowsiness. Patients with photogenic epilepsy should be advised to avoid the sensitivity stimulus. Pregnancy increases the tendency to develop status epilepticus, so adequate dosage must be maintained. Emotional-stress-precipitated epilepsy is treated with the more sedating phenobarbitone. Status epilepticus requires

maintaining an adequate airway, parenteral anticonvulsants, and hospitalization. For children with febrile convulsions, prophylaxis with antipyretics is preferable. Diuretics or increased doses of anticonvulsants should be used for menstrual cycle related convulsions. If many signs of developing grand mal are present in petit mal, the patient should be treated prophylactically for grand mal. Cessation of drug treatment must be evaluated for the individual situation. Side effects of drugs used alone and in combination must be carefully considered. Coexisting abnormalities should be treated. Surgery for idiopathic epilepsy is indicated in rare instances. Special problems of education, employment, driving, marriage, parenthood, and travel are encountered by the patient and family. The physician and agencies that focus on helping these people are useful sources in dealing with these problems. (21 refs.) - *D. Svendsen.*

Westminster Hospital
London, England

1026 DADA, T. O.; OSUNTOKUN, B. O.; & ODEKU, E. L. Epidemiological aspects of epilepsy in Nigeria. (A study of 639 patients). *Diseases of the Nervous System*, 30(12):807-813, 1969.

In a study of 639 Nigerian patients with epilepsy, it was found that 348 (54.4%) had centracephalic epilepsy, 291 (45.5%) had symptomatic epilepsy, 391 (61.2%) were male, and 248 (38.8%) were female. Of the 291 patients with symptomatic epilepsy, 54.6% had secondary grand mal, 21.3% had temporal lobe epilepsy, 11.7% had Jacksonian seizures, 8.6% had focal epilepsy, and 3.8% had hemi-convulsion-hemiplegia epilepsy. The etiology of 169 cases of symptomatic epilepsy which were investigated thoroughly included infection (53 cases), vascular lesions (37 Ss), post-trauma (35 Ss), neoplasia (22 Ss), cerebral palsy (14 Ss), and cortical atrophy (4 Ss). In addition, 4 patients had associated MR. In the 348 patients with centracephalic epilepsy, 95.7% had grand mal seizures, 3% had petit mal, 0.6% had myoclonus, 0.3% had infantile spasm, and 0.3% had akinetic attacks. The incidence of epilepsy in Nigeria ranged from 2.98 to 7.4/1,000 population in various studies. This low incidence rate may be false because patients with epilepsy are highly ostracized in Nigeria; consequently, many cases may be concealed. In addition, non-convulsive forms of epilepsy may not be recognized. (24 refs.) - *F. J. McNulty.*

University of Lagos
Lagos, Nigeria

1027 SCHMIDT, RICHARD P.; & WILDER, B. JOE. *Epilepsy*. Philadelphia, Pennsylvania, F. A. Davis, 1968, 228 p. $7.50.

Although epilepsy is not characterized by definite abnormalities in intelligence or personality, cognitive and personality disorders are found more often among epileptic Ss than among those without neurological disease. Test data for epileptics as a group indicate lower mean intelligence scores than found in non-epileptic controls, and those patients with an early onset of seizures are likely to score lower than those whose seizures begin later. Patients who have had the cause of seizures diagnosed score lower than "idiopathic" epileptics. Institutional populations and public clinic patients score lower than average Ss. Specific psychological abnormalities appear to be more prevalent for the temporal lobe psychomotor group of epilepsies. Management of epileptic patients involves the use of anticonvulsants; control can be established in 70 to 80% of all patients with recurring seizures, and about 1/2 of the patients can be controlled adequately when all seizures are counted. The major symptom of epilepsy is the seizure which indicates disturbance in brain function. Epilepsy is diagnosed by clinical history, EEG examinations, and other techniques. This book should be of interest to neurologists, physicians, educators, psychologists and all professional workers involved in the treatment and management of epileptic patients. (470-item bibliog.) - *B. Bradley.*

CONTENTS: Classification of Epilepsy; The Seizure--Variations on a Theme; The Causes of Epilepsy; The Physiology of Epilepsy; The Chemistry of Epilepsy; The Diagnosis of Epilepsy; The Pharmacology of Anticonvulsant Drugs; Management of the Epileptic Patient; Psychological and Social Aspects of Epilepsy.

1028 SUTHERLAND, JOHN M.; & TAIT, HOWARD. *The Epilepsies*. Edinburgh, Scotland, E. & S. Livingstone, 1969, 128 p. (Price unknown)

About 4 or 5 persons of every 1,000 have some form of epilepsy. The emphasis of this small volume is on the practical and clinical management of epilepsy rather than theoretical orientations. Epilepsy may be either primary (related to genetic factors) or secondary (due to intracranial or extracranial causes). Diagnosis includes careful case history, clinical examination, and ancillary techniques such as EEGs and X-rays. Treatment involves good diagnostic workups, treatment of seizures, anticonvulsants, neurosurgery, recognition of complicating conditions such

as status epilepticus, and consideration of social factors. No relation between epilepsy and intelligence or behavior has been established. About 80% of those children with seizures appearing after infancy are intellectually normal. In anticonvulsant drug therapy for epilepsy, the lowest dose of anticonvulsants that can control the seizures should be used. Surgery is indicated in a very small number of patients. This book should be of benefit to physicians, students, and all professional workers dealing with management and treatment of persons with epilepsy. (No refs.) - *B. Bradley*.

CONTENTS: General Considerations and Classification; The Clinical Features of Epilepsy; A Note on Certain Varieties of Epilepsy; Conditions Which May Simulate Epilepsy; Ancillary Investigations in Epilepsy; The Treatment of Epilepsy; Anticonvulsant Drug Therapy; Certain Complications of Epilepsy; The Surgical Treatment of Epilepsy; Prognosis.

1029 PARSONAGE, MAURICE. Modern management of epilepsy. *Nursing Mirror*, 129(14): 34-38, 1969.

Patients suffering from any kind of epilepsy should undergo thorough investigation, including an EEG examination, an X-ray of the skull, and, optionally, X-rays or radioisotope scanning of the brain. On completion of this examination, anticonvulsant drugs to control the seizures can be prescribed. Ethosuximide is used to control petit mal seizures, and such drugs as phenobarbitone, primidone, phenytoin, sulthiame, pheneturide, diazepam, and/or carbamazepine can be used to control grand mal seuzures. In some cases, surgery may completely relieve patients. The medico-social aspects of epilepsy are extremely important, and a deep understanding of the inherent problems is essential in the management of epileptic patients. (No refs.) *M. G. Conant*.

General Infirmary at Leeds
Leeds, England

1030 GREENWOOD, JAMES, JR.; & KELLAWAY, PETER. Surgical treatment for epilepsy. *Texas Medicine*, 65(11):64-71, 1969.

In selected cases, surgical intervention may be the treatment of choice for intractable epilepsy. Removal is indicated if focal seizures arise from a clearly circumscribed area (EEG and/or electrocorticography). Among 50 epileptic patients refractory to medication and subjected to surgery were 16 in whom discrete lesions were found and excellent surgical results obtained. In 34 cases cortical resection was carried out with the aid of electrocorticography for localization. In 21 cases the patients became seizure free, and a significant reduction of seizure frequency was observed in 8 others. There were no surgical deaths, but 2 of the 6 patients with hemispherectomies died within the follow-up period (3 months and 3 years respectively). (14 refs.) - *E. L. Rowan*.

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MEDICAL ASPECTS--CHROMOSOMAL

1031 TRUJILLO, JOSE M. Chromosomal anomalies and mental retardation. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 7, p. 119-142.

The main groups of human chromosome aberrations are sex chromosome anomalies and autosomal anomalies. Autosomal anomalies are considerably more damaging than sex chromosome anomalies. Among the more common sex chromosome anomalies are Turner's and Klinefelter's syndromes. Individuals with sex chromosome aberrations evidence abnormal sexual development, have physical malformations of the reproductive system, and are often sterile. MR can be a factor and is more severe as the number of X chromosomes increases.

Autosomal anomalies related to MR which involve an extra chromosome include Down's syndrome, Edward's syndrome, and D trisomy. Other autosomal anomalies, such as *cri-du-chat* syndrome, evidence true structural aberrations. Numerical chromosomal aberrations can occur during mitosis or meiosis and are the result of abnormal chromosome segregation or nondisjunction during cell division. Aberrations can affect both somatic and germ cells. Structural anomalies may be the result of damage to the chromosomes from physical, chemical, and biological agents. Successful treatment of genetic diseases requires specific knowledge of the nature and effects of the defective gene and the adoption of appropriate measures to counteract its activity. MR is a common factor in a large number of chromosomal anomalies. At the present time, a preventive approach is the best solution to the medical problem created by chromosomal aberrations. (49 refs.) - *J. K. Wyatt.*

1032 OPITZ, JOHN M. Genetic malformation syndromes associated with mental retardation. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 12, p. 209-225.

Malformation/retardation syndromes include autosomal recessive, autosomal dominant, X-linked, and multifactorial inheritance and chromosomal abnormalities. A diagnosis of congenital MR should be made as early in life as possible and should be based on family history, routine biochemical screening tests, buccal smear screening, chromosome analysis, assessment of pregnancy history, and physical examination. Minor anomalies should be investigated during the physical examination because they may indicate the existence of a major anomaly or of idiopathic MR. When 3 minor and/or major anomalies are found in an individual with MR, a common etiology for the entire malformation/retardation syndrome may be indicated. The majority of the abnormalities found in autosomal syndrome and sex chromosome aneuploidy syndromes are minor. The stages through which new malformation/retardation syndromes are identified are the physical examination syndrome, the formal genesis syndrome, and the causal genesis syndrome. It is difficult to determine the genetic causal genesis of a syndrome because of the factors of etiologic heterogeneity and sporadic occurrence. The majority of the hereditary mutations which lead to MR have not yet been described. (17 refs.) *J. K. Wyatt.*

1033 CLARKE, CYRIL A., ed. *Selected Topics in Medical Genetics*. London, England, Oxford University Press, 1969, 282 p. $9.60.

The realization of the inherited component of all diseases and the importance of normal genetic variation in response to abnormal situations (often iatrogenic) make genetics an essential part of medicine. Pitfalls of genetic studies (omission of the propositus in the studies of modes of inheritance, similar phenotypes produced by different genetic mechanisms, and familial aggregation of diseases not due to genetic factors) are discussed. In addition, the concepts of linkage and association are often confused; in linkage, 2 or more characters are inherited together or separately, while in association, characters appear together more frequently than would be expected by chance. Only 6 autosomal linkages have been established at present. Polymorphism is a type of variation in which individuals with clearly distinct qualities exist in a freely interbreeding single population. Polymorphisms exist only when the mutant genes have a selective advantage over other alleles. The specific clinical aspects of genetics involving pharmacogenetics, immunogenetics, hemoglobulinopathies, and human organ transplantation are discussed. Discontinuous variability of drug action or drug metabolism are useful tools for revealing the presence of hitherto unsuspected human genes. The recent developments in the field of the genetic aspects of amyloidosis, homocystinuria, porphyrias, schizophrenia, the XYY syndrome, spontaneous abortion, chronic granulocytic leukemia, and diabetes mellitus are also presented. (939 refs.) - *L. S. Ho.*

CONTENTS: Pitfalls and Problems in Genetic Studies (Clarke & McConnell); Polymorphism (Clarke); Linkage and Association (Clarke & Jones); Pharmacogenetics (Price & Evans); Disorders of Protein Synthesis (Weatherall & Clegg); The Evolution of Cellular Immunity and the Genetics of Human Organ Transplantation (Harris); Some Aspects of Immunogenetics (Woodrow); Expanding Areas in Medical Genetics.

1034 MOHR, JAN. Chromosomal aberration and malformations. *Acta Ophthalmologica*, 46(3):305-312, 1968.

Congenital and genetic defects accounted for more than 80% of the cases of blindness in one Danish survey; therefore, a knowledge of chromosomal aberrations is essential to the contemporary ophthalmologist. The nucleotide sequence in a single gene may show a point

mutation, inversion, or duplication. Chromosomes may undergo duplication, deficiency, inversion, translocation, or trisomy. All may result in diseases or defects of the eye. (8 refs.) - *E. L. Rowan.*

University Institute of Medical Genetics
Copenhagen, Denmark

1035 ROBINSON, ARTHUR; GOAD, WALTER B.; PUCK, THEODORE T.; & HARRIS, JEROME S. Studies on chromosomal nondisjunction in man. III. *American Journal of Human Genetics*, 21(5):466-485, 1969.

Amniotic cell culture screening for sex chromatin was carried out in 3 Denver (Colorado) hospitals over a 4 1/2 year period, and 26 sex chromatin aberrations (0.17%) were discovered. Clinical examination with karyotypic confirmation revealed 22 infants (0.14%) with trisomy 21 born during the same period. Statistical analysis revealed significant seasonal clustering for both types of anomalies. Immunoglobulin M values on cord blood from controls and some infants with aneuploidy showed marked elevation in several of the latter. This evidence strongly suggests an infectious etiology (possibly rubella) of chromosomal nondisjunction and should stimulate further investigation in this area. (12 refs.) - *E. L. Rowan.*

University of Colorado Medical Center
Denver, Colorado 80220

1036 WILSON, J. A. A prospective, cytogenetic study of recurrent abortion. *Journal of Medical Genetics*, 6(1):5-13, 1969.

Two of 50 women studied because they had a history of 2 or more abortions were found to be carriers of balanced translocations. One had a t(DqDq) karyotype, and the other had a t(1?-;Gq+) translocation. Eight other women had minor chromosomal anomalies. The total number of chromosomal aberrations found was significantly higher than that found in a previous study of 438 randomly chosen adults. Chromosome preparations were successfully made from 8 fetuses, and all had normal karyotypes with 46 chromosomes. One male fetus whose father had a Gp+ chromosome did not carry the anomaly. There was no evidence of mosaicism in any of the fetuses. Further studies to elucidate the problem of habitual abortion are indicated. (34 refs.) *M. D. Nutt.*

University of Liverpool
Liverpool, England

1037 WALZER, STANLEY; BREAU, GERMAINE; & GERALD, PARK S. A chromosome survey of 2,400 normal newborn infants. *Journal of Pediatrics*, 74(3):438-448, 1969.

Chromosomal analysis of 2,400 phenotypically normal newborn infants found 13 with major abnormalities. An analysis which provided a minimal estimate revealed 4 cases of XXY karyotypes as well as 9 infants with 4 different varieties of structural rearrangements. Two of these had an "apparent" centric fusion type of D/D translocation; this translocation in both families was present in at least one antecedent generation. Three infants had extra small metacentric chromosomes in addition to a normal karyotype. There was one case of a reciprocal translocation between a number 2 and a C chromosome, and there were 3 cases of probable pericentric inversion. Results from this survey are comparable to other statistical data on the frequency of chromosomal abnormalities. In an additional 600 newborns surveyed, one male was found to have a C-group chromosome with a break in the long arm adjacent to the centromere. (23 refs.) *B. Bradley.*

Children's Hospital Medical Center
Boston, Massachusetts 02115

1038 CUNNINGHAM, DOUGLAS; & PETERS, EARL R. Cervical hernia of the lung: Associated with the cri du chat syndrome. *American Journal of Diseases of Children*. 118(5):769-771, 1969.

A 4 and 1/2-month-old boy with the *cri-du-chat* syndrome was found to have a cervical hernia of the lungs as well. *Cri-du-chat* was suspected at 2 and 1/2 years of age by his cat-like cry. Typical features of the syndrome were present (wide-spaced eyes, peculiar cry, ear and mandible anomalies, and delayed psychomotor development). In addition, when the neck was antiflexed, the child developed respiratory difficulties, skin mottling, and cyanosis; coughing or crying caused a bulging mass to appear in the anterior cervical triangle. Chromosomal studies revealed a deletion of the short arm of a B-group chromosome, and laryngoscopy found a small hypopharynx and very small epiglottis. Fluoroscopy demonstrated that the apex of the right lung rose above the clavicles, displaced the trachea, and formed the bulging mass in the neck.

This is the first reported case of *cri-du-chat* in association with cervical lung herniation; however, any etiological interrelationships need further research. (7 refs.) *K. Jarka.*

Naval Hospital
San Diego, California 92134

1039 AARSKOG, DAGFINN. A familial 3/18 reciprocal translocation resulting in chromosome duplication-deficiency (3?+18q-). *Acta Paediatrica Scandinavica*, 58(4):397-406, 1969.

An infant boy who had many characteristics of the chromosome 18 deletion syndrome (MR, peculiar facies, ear canal atresia, carp mouth, hypertelorism, and hypoplastic gonads) was found on chromosomal analysis to have a deletion of one chromosome 18. In addition, he had an 18/3 translocation chromosome and a normal number 3 chromosome from his mother plus a normal number 3 chromosome from his father--thus making him trisomic for portions of chromosome number 3. An older brother with a similar constellation of symptoms died at age 7 weeks; this infant lived to 16 months of age before death intervened. An unexpected finding was the absence of anti-A and the very low levels of anti-B isoagglutinins; abnormalities of the immunoglobulin development have been reported before in the deletion of chromosome 18 syndrome, but more investigation needs to be made before the gene loci can be located with any certainty. The gene loci of MNS, Rh, Duffy, Gm, Hp, and phosphoglucomutase can be excluded from the deleted portion of chromosome 18. (32 refs.) *M. D. Nutt.*

Haukeland Sykehus
5000 Bergen, Norway

1040 LADEKARL, SOREN. Combination of Goldenhar's syndrome with the cri-du-chat syndrome. *Acta Ophthalmologica*, 46(3):605-610, 1968.

A 4-year-old boy who presented medically for removal of an epibulbar tumor was found to have features of both the Goldenhar and the *cri-du-chat* syndromes. The epibulbar dermoid, pre-auricular appendices, coloboma, and dental malocculsion are associated with Goldenhar's syndrome while a mew-like cry, MR, a short-arm deletion on a group 4-5 chromosome, a high-arched palate, and transverse palmar crease are characteristics of the *cri-du-chat* syndrome. The association of these syndromes suggests that the loci for the abnormalities in Goldenhar's syndrome may be in group 4-5 chromosomes. (13 refs.) - *E. L. Rowan.*

Kommunchospitalet
Copenhagen, Denmark

1041 THORBURN, MARIGOLD J.; SMITH-READ, ELAINE H. McNEIL; & PECK, JOHN E. A translocation t(Bq+:Cq-) in a West Indian family and a report of a second family showing a possible long arm group B translocation. *Archives of Disease in Childhood*, 44(233):106-112, 1969.

Two unrelated West Indian families are reported in which abnormalities of the long arm of a B autosome are present. In one family, an infant male with multiple congenital anomalies was determined to be partially deficient for the long arm of a B autosome and trisomic for part of the long arm of a C autosome; the mother, 2 sisters, and the maternal grandfather had an increase in the length of one B autosome and a missing autosome in group C as well as an extra autosome in group E. This karyotype was the result of a reciprocal translocation between part of a long arm of a B and the long arm of a C. In the second family (referred for investigation of recurrent abortion), the husband was determined to have mosaicism for an unbalanced karyotype with an enlarged long arm of a B chromosome very similar to that in the propositus of the first family. In addition, although this patient was phenotypically normal, his family history showed a high incidence of infant loss (he was one of 3 surviving children out of a total of 12 pregnancies). Although many reports of abnormalities of the long arms of chromosomes of group-B have been made, there appears to be no single constellation of symptoms associated with these aberrations. (23 refs.) - *B. Bradley.*

University of West Indies
Kingston, Jamaica

1042 MONTELEONE, PATRICIA L.; MONTELEONE, JAMES A.; & GRZEGOCKI, JOAN. An unusual balanced reciprocal translocation in several members of a family. *Journal of Medical Genetics*, 6(4):394-398, 1969.

Chromosome analysis of a 16-year-old girl with physical and mental retardation and multiple congenital anomalies (congenital heart disease, kyphoscoliosis, 3-jointed thumbs, syndactyly, and unusual facies) revealed 47 chromosomes with 5 D chromosomes; 2 minute chromosomes were also present, one of which appeared doubly satellited and the long arm of

one B chromosome was unusually long. The karyotypes of the father and one female sibling were normal, while those of the phenotypically normal mother and another female sibling showed 46 chromosomes with 6 chromosomes in the D group; one of these D chromosomes was unusually small. In addition, there was a very long chromosome in the B group. Apparently, a reciprocal translocation is present in the mother and one female sibling, while the additional small chromosome in the proband represents an additional product of the translocation. (6 refs.) *M. G. Conant.*

Saint Louis University School of Medicine
Saint Louis, Missouri 63104

1043 ALLDERDICE, P. W.; DAVIS, J. G.; MILLER, O. J.; KLINGER, H. P.; WARBURTON, D.; MILLER, D. A.; ALLEN, F. H., JR.; ABRAMS, C. A. L.; & McGILVRAY, E. The 13q- deletion syndrome. *American Journal of Human Genetics*, 21(5):499-512, 1969.

Two additional cases (one 46 Dq-, the other 46 Dr) resemble the 21 previously reported cases with similar deletions and suggest a distinct syndrome caused by partial monosomy for a distal segment of the long arm of chromosome 13. This syndrome is characterized by psychomotor retardation and a characteristic facies with microcephaly, trigonocephaly, a broad nasal bridge, hypertelorism, microphthalmos, epicanthus, ptosis, protruding upper incisors, micrognathia, a short, webbed neck, large, low-set ears, and sometimes facial asymmetry. Hypoplastic or absent thumbs and imperforate anus and/or perineal fistula are also observed. (22 refs.) - *E. L. Rowan.*

College of Physicians and Surgeons
New York, New York 10032

1044 ARAKAKI, DAVID T.; & WAXMAN, SORRELL H. Trisomy-16 in a mosaic carrier father and his aborted foetus. *Journal of Medical Genetics*, 6(1):85-88, 1969.

Cytogenetic study of an aborted fetus from a family with recurrent abortions showed a trisomy 16 karyotype. Investigation of the parents found the father to be mosaic for trisomy 16 in a small number of his cell lines (3% of the leukocytes and 15% of the skin fibroblasts). Although the father was phenotypically normal, some of the abnormal cells must have been present in his gonads, and some of his sperm were, therefore, defective. (9 refs.) - *L. S. Ho.*

Kapiolani Maternity Hospital
Honolulu, Hawaii 96822

1045 WARBURG, METTE; & ANDERSEN, S. RY. Ocular changes in simple trisomy and in a few cases of partial trisomy. *Acta Ophthalmologica*, 46(3):372-383, 1968.

Ocular manifestations often are reported as part of trisomy syndromes. In 21 trisomy, there is frequently epicanthus, oblique palpebral fissures, blepharitis, squint, Brushfield's spots, refractive anomalies, keratoconus, and coerulean cataract. In 13-15 trisomy, there is frequently microphthalmus or anophthalmos, colobomas, cataracts, retinal folds, and intraocular cartilage. Ocular anomalies are rare in 17-18 trisomy. Partial trisomies appear to present variable signs depending on the part of the chromosome involved. (27 refs.) - *E. L. Rowan.*

Ophthalmic Pathology Laboratory
Copenhagen, Denmark

1046 GINSBERG, JOSEPH; PERRIN, EUGENE V.; & SUEOKA, WILLIAM T. Ocular manifestations of trisomy 18. *American Journal of Ophthalmology*, 66(1):59-67, 1968.

Histopathological examination of the eyes was carried out in 2 infants with both clinical evidence and karyotypic confirmation of trisomy 18. Orbital and palpebral anomalies are quite common in this syndrome, and small palpebral fissures, hypotelorism, and nystagmus were noted in these cases. Significant ocular findings included corneal opacities, anomalies of the ciliary processes, breaks in the iris sphincter, and macular abnormalities. The pattern of ocular abnormalities in this syndrome is different from that found in other congenital anomalies. (51 refs.) *E. L. Rowan.*

Cincinnati General Hospital
Cincinnati, Ohio 45229

1047 BAUGHAN, MARJORIE A.; *SPARKES, ROBERT S.; PAGLIA, DONALD E.; & WILSON, MIRIAM G. Blood cell enzymes in trisomy E (18) syndrome. *Journal of Medical Genetics*, 6(1):42-47, 1969.

Blood cell studies on 5 patients with trisomy 18 and age-matched controls do not appear useful in locating the gene loci for any of 15 enzymes studied. Hematological studies were made by usual procedures, and the activities of erythrocyte and leukocyte enzymes were analyzed. There was a slight increase in most enzyme activities in both patients and controls when compared to adult values. The activities of erythrocyte and leukocyte enzymes were similar between patients and controls with the exception of erythrocyte hexokinase which was elevated in 4 of 5 patients. The high red cell hexokinase activities in trisomy 18 patients warrants additional studies; however, the enzymes analyzed did not appear helpful in diagnosing the trisomy E (18) syndrome. (15 refs.)
B. Bradley.

*University of California School of Medicine
Los Angeles, California 90024

1048 FEINGOLD, MURRAY; SCHWARTZ, ROBERT S.; ATKINS, LEONARD; ANDERSON, RONALD; BARTSOCAS, CHRISTOS S.; PAGE, DAVID L.; & LITTLEFIELD, JOHN W. IgA deficiency associated with partial deletion of chromosome 18. *American Journal of Diseases of Children*, 117(2):129-136, 1969.

Dysgammaglobulinemia was noted in 2 patients with chromosome defects. A 3-year-old boy with MR, multiple congenital anomalies, and recurrent infections was found to have a ring chromosome 18. Immunoglobulin (Ig) studies showed absent IgA, very low IgG, and normal IgM, and plasma cells were absent. A 9-year-old girl with MR, cleft lip and palate, and recurrent infections showed a deletion of about 30% of the long arm of the number 18 chromosome. IgA was absent, but IgG and IgM were normal and the patient expressed delayed hypersensitivity. Karyotype and Ig studies of siblings and parents of both patients were normal. The gene locus controlling synthesis of IgA may be on the long arm of chromosome 18, or both the chromosomal abnormality and IgA deficiency may be secondary to a more fundamental genetic defect. (41 refs.)
E. L. Rowan.

20 Ash Street
Boston, Massachusetts 02111

1049 STEWART, JANET; GO, SUMIO; ELLIS, ELLIOT; & ROBINSON, ARTHUR. IgA and partial deletions of chromosome 18. *Lancet*, 2(7571):779, 1968. (Letter)

Two Ss with chromosome 18 abnormalities were studied for immunoglobulin (IgA) abnormalities. The 3 and 1/2-year-old MR girl showed no IgA in serum and parotid secretions; the 18-month-old MR boy had normal IgA levels. (6 refs.) - *A. Huffer.*

University of Colorado Medical Center
Denver, Colorado 80220

1050 PEARSON, P. L.; CLARKE, G.; DAVISON, B. C. CLARE; LENNOX, I. G.; & PRITCHARD, P. M. M. Segregation of a D/G translocation in three families. *Journal of Mental Deficiency Research*, 13(3):209-211, 1969.

Three families with a segregating t(DqGq) translocation were found to have one affected child out of 28 children of heterozygote parents. In addition, in one family, an invariable transmission of balanced gametes occurred from female carriers to their daughters. Difficulties arise in estimating segregation ratio for this type of translocation because of biased population samples in which there is a disproportinate representation of families with 2 or more affected children. (2 refs.) - *K. Jarka.*

Medical Research Council
Oxford, England

1051 MIKELSAAR, A. -V. N. Deletsiya korotkogo plecha odnoi iz malen'kikh akrotsentricheskikh khromosom u cheloveka (Deletion of the short arm of one of the small acrocentric chromosomes of humans). *Genetika*, 5(4):122-128, 1969.

Cytogenetic studies on a newborn female infant with multiple anomalies (including short neck, hare lip and cleft palate, hypertelorism, myelomeningocele, abnormal dermatoglyphics, right-sided heart, and internal hydrocephalus) found small chromosomal fragments in about 15% of the cells. A deletion of the short arm of one of the chromosomes of the G group was found in all cells studied from the proband's father and brother. The mother and a sister had normal karyotypes. Although the father has some unusual dermatoglyphics, the son with the same deletion has no unusual dermatoglyphic traits. Neither the father

nor the brother of the proband appear physically or mentally affected. (13 refs.) *M. D. Nutt.*

Academy of Sciences of the Union of Soviet Socialist Republics
Moscow, Union of Soviet Socialist Republics

1052 ENDO, AKIRA; YAMAMOTO, MASAHARU; WATANABE, GEN-ICHI; SUZUKI, YOSHIBUMI; & SAKAI, KAORU. "Antimongolism" syndrome. *British Medical Journal*, 4(5676):148-149, 1969.

A boy (CA 4 yrs) with clonic seizures, MR, cataracts, peculiar facies, inguineal hernia and other genital anomalies, clubfoot, cleft lip and palate, dermatoglyphic anomalies, and an antimongoloid slant to the palpebral fissures was found to have an abnormally small G chromosome in some cell cultures. Parental and birth histories were non-contributory, and there was no history of prenatal radiation, virus exposure, or drugs. This is the eleventh reported case of the "antimongolism syndrome" in the literature and the first case reported in an oriental. (9 refs.) *K. Jarka.*

Niigata University School of Medicine
Niigata City, Japan

1053 SINHA, ANIL K.; COCHRAN, GLORIA G.; & COCHRAN, WINSTON E. Nondisjunction of chromosome number 21 in siblings. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 8, p. 143-151.

Although nondisjunction of chromosome 21 associated with Down's phenotype in more than one sibling is a rare occurrence, 3 unrelated Caucasian families in which 2 siblings had Down's syndrome have been seen at the child development clinics of Texas Children's Hospital. All parents were phenotypically normal, and there were no consanguineous marriages. Repetition of Down's syndrome in successive pregnancies was probably related to maternal age in the first family; the mother's age at each pregnancy was 35 and 43 years. The mothers in the other 2 families were fairly young. Chromosomal studies of 3 mothers, one father, 2 siblings, and a half-sibling conformed with the usual pattern of 46 chromosomes. It may be that submicroscopic defects in parental genotypes are related to repeated nondisjunctional errors. (6 refs.) - *J. K. Wyatt.*

1054 BLANK, C. ERIC; & LORBER, JOHN. A patient with 45,XX,G-/46,XX,Gr mosaicism. *Journal of Medical Genetics*, 6(2):220-223, 1969.

Chromosome analysis was performed on cells from a female infant who had poor physical and mental development, congenital heart disease, a suggestion of epicanthic folds, and a history of convulsions beginning at one year of age. Two cell lines were identified--one which contained 45 chromosomes and had a G group chromosome missing, and the other which had, in addition, a small ring chromosome. The size of this ring chromosome suggested that partial trisomy of a member of the group G was involved. The specific features of this case do not fit those of mongolism, antimongolism, or partial trisomy 21 and may represent a second group G-deletion syndrome. (5 refs.) - *M. G. Conant.*

University of Sheffield
Sheffield, England

1055 MOORE, K. M.; & ENGELY B. G chromosome trisomy: Five cases with syndrome other than classical Down's. *Southern Medical Journal*, 61:146-154, 1968.

Five Ss with small acrocentric trisomy were scored for features of Down's syndrome as were control Ss (matched for age and sex), and 4 Ss were found to have a reasonable number of Down's syndrome features. The fifth patient had very few characteristics of Down's syndrome, but this patient resembled Ss with the D trisomy syndrome. (No refs.) *A. Huffer.*

No address

1056 VALENTI, CARLO; SCHUTTA, EDWARD J.; & KEHATY, TEHILA. Cytogentic diagnosis of Down's syndrome in utero. *Journal of the American Medical Association*, 207(8):1513-1515, 1969.

Amniocentesis was performed during the eighteenth week of pregnancy on a 29-year-old woman who was a balanced carrier of a D/G chromosome translocation and who had previously borne an infant with Down's syndrome. Karyotype of fetal cells revealed a modal chromosome number of 46 and D/G fusion. Therapeutic abortion was carried out by intra-amniotic instillation of hypertonic saline. The macerated fetus had dermatoglyphics and flexion creases characteristic of Down's syndrome and

also showed multiple cardiac anomalies. Monitoring the fetus by prenatal cytogenetic study is useful in a patient with a high risk of bearing a defective child. (18 refs.) *E. L. Rowan.*

450 Clarkson Avenue
Brooklyn, New York 11203

1057 FABIA, JACQUELINE. Illegitimacy and Down's syndrome. *Nature*, 221(5186): 1157-1158, 1969. (Letter)

The incidence of Down's syndrome in children born to unmarried mothers was found to be the same as that found in married mothers. Increasing maternal age appears to be a factor in the birth of mongoloid children in both groups, and there is no strong evidence for an effect of low frequency of intercourse. (6 refs.) - *L. E. Hays.*

International Children's Centre
Paris, France

1058 BERG, J. M.; & BAVIN, J. T. R. Mongolism and maternal menarche. *Journal of Medical Genetics*, 6(2):135-136, 1969.

There was no statistically significant difference in the stated age of menarche between mothers of 792 Ss with Down's syndrome and mothers of 636 SMRs who did not have Down's syndrome. Both groups reflected the secular trend to reduction in the age of menarche over the last half-century. There was a tendency for younger mothers of Down's syndrome Ss to have an early menarche, and this should be investigated further in connection with fertility, mosaicism, and non-disjunction in mongolism. (3 refs.) - *E. L. Rowan.*

Harperbury Hospital
St. Albans, England

1059 DARK, A. J.; & *KIRKHAM, T. H. Congenital corneal opacities in a patient with Rieger's anomaly and Down's syndrome. *British Journal of Ophthalmology*, 52(8):631-635, 1968.

Bilateral corneal opacities and left keratoconus were noted in a female infant with both Down's syndrome and Rieger's anomaly. The ocular findings were apparently associated with an annular adhesion of the iris collarette to the posterior corneal surface. This had previously been related to Rieger's anomaly which had affected this family through 3 generations. Down's syndrome appeared to be coincidental. Lamellar keratoplasty was initially successful in restoring vision to one eye. (4 refs.) - *E. L. Rowan.*

*The Royal Hospital
Sheffield, S1 3SR, England

1060 OLSON, MARY I.; & SHAW, CHENG-MEI. Presenile dementia and Alzheimer's disease in mongolism. *Brain*, 92(Part 1):147-156, 1969.

Typical plaques, neurofibrillary tangles, and granulovacuolar changes characteristic of Alzheimer's disease were found in 3 Ss with Down's syndrome who were over 35 years of age. A fourth patient, age 23, had questionable changes, but 24 younger cases were without such microscopic findings. Only the oldest woman (age 51) had a clinical history of progressive dementia. A literature review revealed that all 29 Ss with Down's syndrome who were over age 35 and who came to autopsy had neuropathological findings of Alzheimer's disease. This supports the implication of early aging in association with Down's syndrome. This suggests a fruitful area of research into the process of aging; however, more knowledge of the histogenesis of the various changes of Alzheimer's disease, specific karyotypes of affected Ss, and exhaustive studies in younger patients will be necessary. (24 refs.) - *E. L. Rowan.*

University of Washington Medical School
Seattle, Washington 98105

1061 BURCH, P. R. J.; & MILUNSKY A. Early-onset diabetes mellitus in the general and Down's syndrome populations. Genetics, aetiology, and pathogenesis. *Lancet*, 1(7594): 554-558, 1969.

Comparison of the age-distribution of early-onset diabetes mellitus in the general and in Down's syndrome populations shows that the peak initiation rate occurs at age 14 years (general population) and 8 years of age (Down's syndrome) and that this disorder is probably autoaggressive in etiology. The disease process is initiated in a predisposed person by 2 random somatic mutations of homologous genes probably on chromosome 21. The mutant growth-control cell propagates a forbidden clone, and the products secreted by

these cells attack target cells--the β-cells of islets of Langerhans. (34 refs.)
L. S. Ho.

University of Leeds
Leeds, England

1062 MILUNSKY, AUBREY. Down's syndrome and cystic fibrosis. *Pediatrics*, 43(5): 905-906, 1969. (Letter)

The case of a newborn who was previously described as having Down's syndrome and cystic fibrosis with hypoplastic thrombocytopenia instead may have had Shwachman's syndrome (pancreatic insufficiency and bone marrow dysfunction). (4 refs.) - *A. Huffer.*

Tufts New England Medical Center
Boston, Massachusetts 02111

1063 WILROY, R. S., JR.; SUMMITT, ROBERT L.; & ATNIP, ROBERT L. De-novo G-G translocation Down's syndrome in two siblings. *Lancet*, 2(7617):438, 1969. (Letter)

Two Negro sisters exhibited Down's syndrome stigmata which were attributable to G-G translocation. This is apparently the first de-novo occurrence of siblings with Down's syndrome reported. Lymphocytes from peripheral blood had karyotypes with 46 chromosomes (3 small, structurally normal acrocentrics and 2 small, metacentrics). A normal sister, the middle child, had a normal karyotype and no abnormalities. Chromosomal analysis of the parents revealed that neither was a carrier, although undetected mosaicism is possible. (No refs.) - *A. Huffer.*

University of Tennessee Medical Units
Memphis, Tennessee 38103

1064 KEELE, DOMAN K.; RICHARDS, CONSTANCE; BROWN, JAMES; & MARSHALL, JANE. Catecholamine metabolism in mongolism. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 20, p. 318-325.

Dopamine, norepinephrine, epinephrine, dihydroxymandelic acid, metanephrine, normetanephrine, and vanillylmandelic acid determinations were made on institutionalized mongoloid patients (mean IQ 28) and a control group of nonmongoloid MRs (mean IQ 38). All Ss received a vanillin-free diet for 4 days prior to and during urine collections. The results for mongoloid Ss were the same as for controls except for the conjugated and free urinary epinephrine levels. Mongoloid Ss had low epinephrine excretion. The low values for urinary epinephrine in mongolism may indicate a decreased release of epinephrine from the adrenal glands. (13 refs.)
J. K. Wyatt.

1065 HALL, B.; & DAHLQVIST, A. Galactose-1-phosphate-uridyl-transferase activity in blood in translocation Down's syndrome. *Lancet*, 2(7626):907-908, 1969. (Letter)

Nine translocation Ss (6 G/G and 3 D/G) and 10 trisomy Ss with Down's syndrome exhibited no difference in blood galactose-1-phosphate-uridyl-transferase activity; however, all, except one from each group, had higher activity levels than 32 control Ss. The enzyme activity was measured by a uridine-diphosphate-glucose consumption test with dithiothreital as the activator. The mean activity level was 42.37/g hemoglobin for the translocation group, 37.35 for the trisomy group, and 28.11 for the control group. (6 refs.)
A. Huffer.

University of Lund
Lund, Sweden

1066 NADLER, HENRY L.; MONTELEONE, PATRICIA; & HSIA, DAVID YI-YUNG. Enzyme studies during lymphocyte stimulation with phytohemagglutinin in Down's syndrome. *Life Sciences*, 6(18):2003-2008, 1967.

After stimulation with phytohemagglutinin, peripheral blood lymphocytes from Ss with Down's syndrome had elevated levels of acid phosphatase, alkaline phosphatase, and glucose-6-phosphate dehydrogenese when compared with lymphocytes from control Ss. The incorporation of tritiated thymidine by the lymphocytes showed similar results. (No refs.)
A. Huffer.

No address

1067 SPARKES, ROBERT S.; & BAUGHAN, MARJORIE A. Blood cell enzymes in translocation Down's syndrome. *American Journal of Human Genetics*, 21(5):430-439, 1969.

Ten patients with translocation Down's syndrome (5 with D/21 and 5 with G/21) and their controls were compared for quantities of 18 erythrocyte and leukocyte enzymes. No "gene dosage effect" was demonstrable, and no single hematologic or enzymatic assay was able

to significantly distinguish these groups. None of these enzymes could be localized to chromosome 21, and multiple factors including multimers, regulatory genes, substrates, and inhibitors and activators suggest that quantitative enzyme studies may not be a valid test of gene localization. (38 refs.) *E. L. Rowan.*

University of California School of Medicine
Los Angeles, California 90024

1068 SASAKI, MOTOMICHI; & OBARA, YOSHITAKA. Hypersensitivity of lymphocytes in Down's syndrome shown by mixed leucocyte culture experiments. *Nature*, 222(5193):596-598, 1969.

Some small lymphocytes show a blastoid transformation, synthesize DNA, and undergo mitosis when mixed with cells from an unrelated individual in leukocyte culture. This effect was enhanced in leukocytes from patients with Down's syndrome (DS). Mixtures of cells from patients with DS or from patients with DS and normal patients showed much more mitotic activity than mixtures from normal patients or from DS or normal patients cultured alone. Karyotypic analysis showed that cells from DS patients had a much higher activity than the cells from normal patients when these were mixed together. This lymphocytic hypersensitivity may have some relation to the leukemia and immunologic abnormalities found in DS, but the mechanism is unknown. (3 refs.) *E. L. Rowan.*

Hokkaido University
Sapporo, Japan

1069 BENDA, CLEMENS E. *Down's Syndrome. Mongolism and Its Management*. New York, New York, Grune & Stratton, 1969, 271 p. $13.75.

Mongolism is the most frequently encountered chromosomal aberration with physical and mental retardation. From 6 weeks to 3 months of gestation is the critical period in which the chromosomal dysfunction seen in mongolism results in dyschronism and retardation of differentiation and development. The clinical features of affected infants at birth often are not conspicuous, and deviations are easily overlooked by the obstetrician. The most reliable symptom at birth is the general hypotonia--a manifestation of cerebral immaturity. Signs of premature aging become observable by the patient's third decade of life. Some patients show psychological changes with increased stubbornness and unpredictable behavior. In their thirties and forties, many patients develop Alzheimer's disease. The average mental age of mongoloid patients is between 2 and 5 years. Medical treatment and educational training over a long period can improve the mental capacity to about that of an 8-year old. Hematology, biochemistry, cytogenetics, pathology of the nervous system, and endocrine pathology have distinct characteristics in mongolism. Factors likely to be operative in the etiology of mongolism include virus disease in the mother, frequent diagnostic X-ray examinations of the mother, and malnutrition. The incidence of mongolism increases with the age of the mother--1/2,300 at maternal age of 21 and 1/54 at age 45 years or over. (348-item bibliog.) - *L. S. Ho.*

CONTENTS: History, Frequency, Terminology; The Clinical Diagnosis at Birth; Physical Development and Aging; Anatomic and X-ray Observations; Mental Development; Hematology and Biochemistry; Cytogenetics and Molecular Pathology; Pathology of the Nervous System; Endocrine and General Pathology; Prevention and Empirical Risk Figures; Problems of Therapy.

1070 GOWAN, MARIA. My son is a mongoloid. *Prevention*, 22(3):70-76, 1970.

During the ages of 10-28 months, a male infant with Down's syndrome made rapid gains toward normalcy while receiving a series of medications developed by Turkel. His skin color changed from yellow to pink, his chronic wheezing abated, and his eyes were brighter. By 1 and 1/2 years of age, the infant could walk and talk; however, during a period of several months when the drugs were unavailable, marked regression appeared in the boy. Once the medication was readministered, regression stopped and progress toward normalcy was again established. (No refs.) - *C. L. Pranitch.*

No address

1071 STEVENSON, A. C.; BOBROW, M.; DAVISON, B. C. CLARE; & MASON, RITA. Down's syndrome in families referred for advice. *Journal of Mental Deficiency Research*, 13(3): 206-208, 1969.

Of 201 consecutive families who had a member with Down's syndrome and who were referred to a population genetics unit for advice, 111 (55%) had the first or only affected child when the mother was < 30 years old. The

maternal age when the mongoloid child was born was between 15-20 years for 11 of the families, between 20-25 for 47, between 25-30 for 53, between 30-35 for 44, between 35-40 for 22, between 40-45 for 22, and over 45 for 2. The index child had 47 chromosomes in 152 families, was a 46/47 mosaic in 4 families, had a 46t(D/G) in 5 families, and was clinically affected, but the chromosome pattern was undermined in 40 families. Five families (one with identical twins) had 2 affected sibs. (2 refs.) - *A. Huffer.*

Medical Research Council
Headington, Oxford, England

1072 FREEMAN, MAHLON V. R.; & MILLER, ORLANDO J. XY gonadal dysgenesis and gonadoblastoma: Report of a case. *Obstetrics and Gynecology*, 34(4):478-483, 1969.

A 17-year-old female with primary amenorrhea, feminine appearance with moderate masculinization, and gonadal dysgenesis, had a 46XY karyotype but no evidence of Turner's syndrome. Exploratory celiotomy revealed a normal uterus and bilateral fallopian tubes and bilateral gonadoblastomas which were removed. Both tumors showed extensive calcification and foci of invasive germinoma. This condition is clinically distinct from Turner's syndrome and the androgen insensitivity syndrome (testicular feminization), both of which are associated with unusual chromosome complements and primary amenorrhea. (26 refs.) *M. G. Conant.*

Armed Forces Institute of Pathology
Washington, D. C. 20305

1073 IZAKOVIC, VILIAM. Mosaicism 45,X/46,XX in two sisters. *Journal of Clinical Endocrinology and Metabolism*, 29(6):863, 1969.

Two sisters with gonadal dysgenesis were found to have 45,X/46,XX chromosomal mosaicism. Over a 10-year period there was a gradual rise in the proportion of Barr-positive nuclei in cells from buccal epithelium. This suggests a process of selection against the monosomic cell line. (4 refs.) - *E. L. Rowan.*

Postgraduate Medical Institute
Bratislava, Czechoslovakia

1074 GORDON, DONALD L.; KRMPOTIC, EVA; ZELINGER, BERNARD B.; & ROSENBLUM, LEIGH E. Sex chromosome mosaicism in the testicular feminization syndrome. *Obstetrics and Gynecology*, 34(6):779-782, 1969.

A 17-year-old phenotypic female with amenorrhea demonstrated the complete form of testicular feminization syndrome (TFS) and a probably coincidental finding of 46,XX/46,XY mosaicism. Male gonads were uncovered and removed at laparotomy. Two cousins of this patient showed TFS with normal karyotype. The mosaicism produced no clinical manifestations and probably resulted from an anaphase lag of the Y chromosome in a 46,XY cell line sometime after the second week of fetal life. (17 refs.) - *E. L. Rowan.*

Mount Sinai Hospital Medical Center
Chicago, Illinois 60608

1075 FERGUSON-SMITH, M. A.; BOYD, ELIZABETH; FERGUSON-SMITH, MARIE E.; PRITCHARD, J. G.; YUSUF, A. F. M.; & GRAY, BRENDA. Isochromosome for long arm of Y chromosome in patient with Turner's syndrome and sex chromosome mosaicism (45,X/46,XYqi). *Journal of Medical Genetics*, 6(4):422-425, 1969.

A patient with the classical features of Turner's syndrome (short stature, sexual infantilism, and characteristic multiple developmental malformations) was found at necropsy to have minor degrees of masculinization of the internal and external genitalia. Chromosome analysis revealed sex chromosome mosaicism of the 45,X/46,XYqi type, and buccal smears were chromatin negative. The patient's brother had an apparently normal male karyotype, and his buccal smears were chromatin negative. The Turner phenotype is attributed to the 45,X cell line, and the masculinization and abnormal development of mesonephric structures to the 46,XYqi cell line. (4 refs.) - *M. G. Conant.*

University of Glasgow
Glasgow, Scotland

1076 PREDESCU, V.; CHRISTODORESCU, D.; TAUTU, C.; CIOVIRNACHE, M.; & CONSTANTINESCU, E. Repeated abortions in a woman with XO/XX mosaicism. *Lancet*, 2(7613):217, 1969. (Letter)

A 30-year-old female, who had had 4 spontaneous abortions, gave birth to a premature girl who had signs of Down's syndrome and who

died on the fourth day from cerebral hemorrhages, pulmonary atelectasis, and peritonitis. Although the mother had a normal phenotype, lymphocyte culture showed gonosomal mosaicism 45,XO/46,XX. Her dermatoglyphics exhibited features usually seen in Turner's syndrome. (11 refs.) - *A. Huffer.*

G. Marinescu Hospital
Bucharest, Romania

1077 SHAPIRO, LAWRENCE R. Repeated abortions in XO/XX mosaicism. *Lancet*, 2(7624): 806, 1969. (Letter)

Spontaneous, repeated abortions in XO/XX mosaicism may be due to the fact that if an ovum which is missing an X chromosome is fertilized by a Y-bearing sperm, the resultant 45,YO product is non-viable; however, if the abnormal ovum is fertilized by X-bearing sperm, the result will be a viable 45,XO product. (7 refs.) - *A. Huffer.*

Letchworth Village
Thiells, New York 10984

1078 BAUGHMAN, FRED A., JR. Klinefelter's syndrome and essential tremor. *Lancet*, 2(7619):545, 1969. (Letter)

In a routine buccal smear survey on borderline or MR patients over a 4-year period, 2 sex-chromatin-positive males were found. Both had sought medical attention for tremor. One patient (CA 15 yrs) had a 47,XXY karyotype, and his paternal grandfather had had a tremor which began in his 40s. The other S (CA 48 yrs) had a 48,XXYY karyotype and had had essential tremor since grade school; however, there was no family history of tremor. Essential tremor is usually inherited as an autosomal dominant trait, and the appearance of this disorder in childhood or young adulthood without a definite family history is relatively rare. Possibly an association of Klinefelter's syndrome and tremor may have been overlooked in previous cases. The extra X chromosome may somehow modify the expression of the tremor. (2 refs.) - *S. Half.*

Blodgett Memorial Hospital
Grand Rapids, Michigan

1079 CHIANG, WEN-TSUO; & CHIANG, WAN-HSUAN. Undetected Klinefelter's syndrome as a cause of azoospermia. *American Journal of Obstetrics and Gynecology*, 103(4):592-593, 1969.

Among 29 azoospermic men evaluated at a sterility clinic were 3 who had previously undetected Klinefelter's syndrome. All 3 had positive buccal smears and XXY karyotypes, but only one had even minimal clinical features typical of the syndrome. All were married and sexually active. Measured intelligence in each was between 84 and 90. Two had an hallucal arch-tibia pattern on dermatoglyphic examination. Sterility is a common feature of Klinefelter's syndrome; however, in the absence of other clinical findings, it may be the first manifestation of this chromosomal abnormality. (3 refs.) - *E. L. Rowan.*

University of Washington
Seattle, Washington 98105

1080 NIELSEN, JOHANNES; JOHANSEN, KLAUS; & YDE, HANS. Frequency of diabetes mellitus in patients with Klinefelter's syndrome of different chromosome constitutions and the XYY syndrome. Plasma insulin and growth hormone level after a glucose load. *Journal of Clinical Endocrinology & Metabolism*, 29(8): 1062-1073, 1969.

Glucose tolerance and plasma insulin and growth hormone response to a glucose load were analyzed in 31 patients with chromatin-positive Klinefelter's syndrome, and 12 of the 31 (39%) with more than one X chromosome had a diabetic glucose tolerance test (GTT). None of the 6 XYY patients and only one of 8 of the chromatin-negative Klinefelter's patients had a diabetic GTT. Nineteen percent of the mothers and 6.5% of the fathers of chromatin-positive Klinefelter's Ss with diabetic GTTs had overt diabetes mellitus. A genetic association apparently exists between disposition to certain types of diabetes and to chromosomal nondisjunction. The diabetes in these patients is a mild type, but the insulin reaction (a "brisk" rise of plasma insulin and prolonged high levels after glucose ingestion) differs from that occurring in maturity-onset diabetes. (54 refs.) *B. Bradley.*

Aarhus State Hospital
Risskov, Denmark

1081 SPENCER, D. A.; EYLES, JULIE W.; & MASON, M. K. XYY syndrome, and XYY/XXYY mosaicism also showing features of Klinefelter's syndrome. *Journal of Medical Genetics*, 6(2):159-165, 1969.

Two cases of 47,XYY/48,XXYY mosaicism and one case of the 47,XYY syndrome were found among 250 men in a hospital for MRs. All 3 patients showed MR, tallness, and antisocial and delinquent behavior, together with some acromegalic features. The 2 men with mosaicism also had small testes, scanty pubic and axillary hair, and vision defects (physical features of Klinefelter's syndrome); they, thus, presented a classification problem. Excretion of 17-ketosteroids and 17-hydroxycorticosteroids were below normal in one case of mosaicism, but normal in the other 2 men. (10 refs.) - *M. G. Conant.*

Westwood Hospital
Bradford 6, England

1082 KNOX, S. J.; & NEVIN, N. C. XYY chromosomal constitution in prison populations. *Nature*, 222(5193):596, 1969.

A chromosomal analysis performed on 67 prisoners over 177.5 cm tall at the Belfast (Northern Ireland) Prison did not reveal any of these men to have a 47,XYY constitution. Although men with this abnormality are frequently discovered in surveys of hospitals for the criminally insane, this does not appear to be the case in surveys of prisons and other penal institutions. (8 refs.)
E. L. Rowan.

Purdysburn Hospital
Belfast, Northern Ireland

1083 NIELSON, J.; & TSUBOI, T. Intelligence, EEG, personality deviation, and criminality in patients with the XYY syndrome. *British Journal of Psychiatry*, 115(525):965, 1969.

All nine XYY patients found in 2 psychiatric institutions had Wechsler Adult Intelligence Scale IQs >90 (range 90-120, mean 99), personality disorders, and criminal records, but only 3 had slightly abnormal EEGs (the expected frequency among psychiatric patients). Six of the Ss were located in a group of 400 Ss with records of personality deviation and criminality; the other 3 were found in a mental institution with 1,180 patients (criminality frequency 20%). Thus the frequency of the XYY syndrome among psychiatric Ss is 1.5% (30 times higher than the expected frequency in the general population). (6 refs.)
A. Huffer.

Aarhus State Hospital
Risskov, Denmark

1084 LEHRNBECHER, WOLFGANG; & LUCAS, GEORGE J. Disorders of brain and connective tissue in a patient with 47,XYY karyotype *Lancet*, 2(7624):796-797, 1969. (Letter)

The combination of an XYY chromosomal complement and disorders of the brain and connective tissue in an MR male (5 ft 2 in tall) suggests that the spectrum of diseases associated with the constitution may be large. The S, originally hospitalized for antisocial behavior, has deteriorated mentally and has exhibited generalized progressive muscle weakness to the point where no myotonic response could be elicited. (3 refs.)
A. Huffer.

Saint Elizabeth Hospital
Washington, D. C. 20032

1085 MARINELLO, MICHELLE J.; BERKSON, RICHARD A.; EDWARDS, JOHN A.; & *BANNERMAN, ROBIN M. A study of the XYY syndrome in tall men and juvenile delinquents. *Journal of the American Medical Association*, 208(2):321-325, 1969.

Four new cases of the XYY syndrome in tall men were found in a survey of selected populations; 2 were found among 86 tall male prisoners, one was found among 76 tall white males from a state hospital, and one was found among 57 juvenile delinquents. The frequency of XYY males found in this survey is ten times as great as that in the newborn male population. All the cases found were tall, physically normal, but abnormal in behavior. All were known to be tall at early adolescence. In addition, all came from broken or unsatisfactory homes, and there was a high incidence of MR among their siblings. (31 refs.) - *B. Bradley.*

*100 High Street
Buffalo, New York 14203

1086 DALY, RICHARD F.; CHUN, RAYMOND W. M.; EWANOWSKI, STANLEY; & OSBORNE, RICHARD H. The XYY condition in children: Clinical observations. *Pediatrics*, 43(5):852-857, 1969.

A 6-year-old boy with XYY chromosomal complement was found to have normal intelligence (IQ 106), extremely tall stature, rapid growth rate, motor dysfunction, and speech and muscle abnormalities. His genitalia were normal except for a right hydrocoele. This patient differs from the few prepubertal XYY males previously reported who commonly had MR and genital malformations. Neurological anomalies may be more universal symptoms of this condition than has been recognized. (16 refs.) *L. S. Ho.*

University of Wisconsin
Madison, Wisconsin 53706

1087 FRIEDRICH, URSULA; & NIELSEN, JOHANNES. Lithium and chromosome abnormalities, *Lancet*, 2(7617):435-436, 1969. (Letter)

Three psychiatric Ss treated with lithium (600-800 gm daily) had a significantly higher frequency of chromosomal breaks ($p<.001$) and hypodiploid cells ($p<.001$) than did 11 controls of the same age. There were no differences between the groups for gaps or hyperdiploid cells. (7 refs.) - *A. Huffer.*

Aarhus State Hospital
Risskov, Denmark

1088 KATO, TAKASHI; & JARVIK, LISSY F. LSD-25 and genetic damage. *Diseases of the Nervous System*, 30(1):42-46, 1969.

In vitro and *in vivo* studies of chromosomal damage resulting from lysergic acid diethylamide (LSD) have been contradictory. In this study, cultured leukocytes were treated with LSD, ergonovine maleate, aspirin, and streptonigrin, and in all cases, the number of chromosomal abnormalities was significantly greater than in controls. The distribution of abnormalities among chromosome groups was random, however. An extremely wide range of normal values (0 to 28%) suggests a great deal of variability in individual response and/or laboratory technique; therefore, the validity of generalizations based on small samples must be questioned. The great individual and study differences suggest that a great many questions are still unanswered. Data on the relevancy of *in vitro* studies, longitudinal studies, long-term follow-up, LSD in pregnancy, and experimental replicability are not available. (18 refs.) *E. L. Rowan.*

New York State Psychiatric Institute
New York, New York

1089 HEDDLE, JOHN A.; WHISSELL, D.; & BODYCOTE, D. JUDY. Changes in chromosome structure induced by radiations: A test of the two chief hypotheses. *Nature*, 221 (5186):1158-1160, 1969. (Letter)

Of the 2 hypotheses advanced to explain chromosomal aberrations (the classical "breakage-first" and the new exchange hypothesis in which it is postulated that the initial lesion is not a break but an exchange involving 2 lesions), data support the exchange hypothesis. Chromosome labeling experiments with tritiated thymidine produced frequency of exchange which agreed with that predicted by the exchange hypothesis (an opposite prediction to that given by the classical breakage-first theory). Chromatid deletions are probably incomplete exchanges between sister chromatids and a mixture of unrejoined single breaks. (8 refs.) - *L. E. Hays.*

University of California Medical Center
San Francisco, California 94122

1090 STENCHEVER, MORTON A.; JARVIS, JANE A.; & KREGER, N. KRISTINE. Effect of selected estrogens and progestins on human chromosomes in vitro. *Obstetrics and Gynecology*, 34(2):249-251, 1969.

Several estrogens and progestins, commonly used in oral contraceptives, were individually added to cultures of human leukocytes, and no chromosomal abnormalities were noted. The progestins (progesterone, megestrol acetate, dimethisterone, norethindrone acetate, and chlormadinone acetate) and the estrogens (estradiol, ethinyl estradiol, and mestranol) were incubated for 72 hours with the white cells in 4 concentrations ranging from 0.1 μg/ml to 100μg/ml. There was a control group of white cells for each compound studied, and the examinations were done by a "blind" procedure to eliminate observer bias. No significant incidence of chromosomal abnormality was found for any compound at any concentration. Although growth in the very high concentration of 100μg/ml was poor or absent in several cultures, the incidence of breakage was not significant. (1 ref.) - *W. Klein.*

Case Western Reserve University
Cleveland, Ohio 44106

MEDICAL ASPECTS--MISCELLANY

1091 FALBE-HANSEN, IENS. Congenital ocular anomalies in 800 mentally deficient patients. *Acta Ophthalmologica*, 46(3):391-397, 1968.

Congenital ocular anomalies were found in 88 (or 11%) of 800 MR (IQ <70) residents of a Danish institution. The most frequent deformities were optic atrophy (22), nystagmus (16), congenital cataract (14), abducens nerve paresis (6), and microphthalmus (6). Etiology was established in 52 of the cases and included neonatal asphyxia (11), premature birth (10), Down's syndrome (9), intrauterine rubella (6), and intrauterine toxoplasmosis (5). (1 ref.) - *E. L. Rowan.*

Ostifternes Andsvageanstalt
Birkerod, Denmark

1092 FITZGIBBONS, JOHN P., JR.; NOBREGA, FRED T.; LUDWIG, JURGEN; KURLAND, LEONARD T.; & HARRIS, LLOYD E. Sudden, unexpected, and unexplained death in infants. *Pediatrics*, 43(6):980-988, 1969.

Among infants from 2 weeks to 2 years of age in Olmsted County (Minnesota) in the period 1946-1965, there were 210 deaths, of which more than 1/3 were due to congenital anomalies, 15% to infectious diseases, 13% to respiratory tract infection, 8% to birth trauma or injury, 2% to malignancy, 4% to miscellaneous causes, and 22% to sudden and unexpected factors. Autopsy revealed adequate cause of death in 9 of these latter 46 cases, but the remaining 37 cases (32 of which included autopsy) were classified clinically as sudden, unexpected, and unexplained deaths. The incidence was 1.2/1,000 live births, and there was some seasonal variation with peaks in October-November and May-June. The mean age at death was 2.8 months, 90% of the deaths occurred in the period from midnight to noon, and all but one of the infants was found dead in bed. Eight of the infants showed signs or symptoms of some minor illness within a few days prior to death; however, autopsy reports were not consistent with an overwhelming infection. The similarities of these cases suggest that the deaths were due to some common mechanism, although the triggers that set it off may vary. (32 refs.) - *M. G. Conant.*

Mayo Clinic
Rochester, Minnesota 55901

1093 SCHOOLAR, JOSEPH CLAYTON. Transplacental psychotropic agents. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 13, p. 226-234.

Studies of drug effects on pregnant infrahuman animals should use several species, and comparisons should be made of maternal placental differences, biotransformation, critical periods for gestation for specific drugs, structural differences in the central nervous system, rates of myelinization, water content of the brain, and enzymatic differences. Research designs should provide for chronic, rather than acute, studies and should control for volume and method of injection and animal handling. Correct distinctions should be made among learning, behavior, and performance, and differential responses to social situations should be considered when animal data are related to humans. The bromide ion decreased reasoning ability in rats and increased the audiogenic seizure threshold. Ethanol decreased the intelligence of gravid rats, barbiturates early in pregnancy decreased maze learning ability, and meprobamate decreased learning ability. Iproniazid and isocarboxazid were toxic to offspring survival. The effects of maternal chlorpromazine on the learning of offspring rats vary. Studies which compared the effects of maternal chlorpromazine, meprobamate, phenobarbital, and reserpine on learning, motor activity, and electroshock seizure threshold of offspring rats found that the earlier stages of gestation were more vulnerable than later stages. (21 refs.) - *J. K. Wyatt.*

1094 NICHOLSON, H. O. Cytotoxic drugs in pregnancy. *Journal of Obstetrics and Gynecology: British Commonwealth*, 75(3):307-312, 1968.

In 185 pregnancies in which cytotoxic drugs were administered, 10 malformed fetuses were found with aminopterin (administered in the first trimester); therefore, this drug should never be administered to pregnant women. Other drugs given in the first trimester resulted in 4 of 53 malformed fetuses. There appears to be no greater than normal risk when treatment occurs during the second or third trimesters; however, 40% of the infants had low birth-weights. (No refs.) *A. Huffer.*

No address

1095 COULSON, ALAN S.; SUMMERS, LUCY JANE; & INMAN, DAVID R. Teratogenesis and lymphocyte stimulation. *British Medical Journal*, 3(5661):52, 1969.

An apparent correlation exists between the teratogenic effects of certain chemical agents and a lymphocyte-inhibiting effect which is manifested as a blocking of antigen or phytohemagglutinin-induced transformation *in vitro*. Both the teratogenicity and the lymphocyte inhibition were demonstrated *in vitro*; therefore, it seems reasonable to assume that such effects occur *in vivo*. Lymphocyte transformation inhibition *in vitro* may be useful in screening for teratogenic drugs. (11 refs.) - *E. Hays.*

Imperial Cancer Research Fund
London W.C. 2, England

1096 MANDELBAUM, BERNARD; & EVANS, TOMMY N. Life in the amniotic fluid. *American Journal of Obstetrics and Gynecology*, 104(3):365-377, 1969.

Chemical and cellular components of amniotic fluid change throughout pregnancy; bilirubin decreases and creatinine increases as the fetus matures. Fetal urine and amniotic fluid have different compositions which indicates that there are multiple and changing sources of amniotic fluid. The fetus is observed to begin deglutition near the end of the first trimester; this suggests that amniotic fluid may be an important source of fetal nutrition. Protein fractions in human amniotic fluid show a distribution similar to that in fetal, but not maternal, blood serum, and the normal fetus ingests and retains more amniotic fluid as he grows. Maternal urinary estriol levels appear to be more closely correlated with the fetal status than previously reported in connection with erythroblastosis fetalis. (24 refs.) - *M. G. Conant.*

Wayne State University School of Medicine
Detroit, Michigan 48207

1097 WISER, W. L.; & *THIEDE, H. A. Amniotic fluid and fetal maturity. *Southern Medical Journal*, 62(6):755-756, 1969.

Creatinine, bilirubin, and lipid-staining cell levels in the amniotic fluid were used as criteria for determining fetal maturity in 72 Ss, 36 of whom either had bleeding or metabolic complications during the last trimester of pregnancy. A scoring system was developed in which a bilirubin level of less than 0.01 optical density difference, a creatinine level of 2 mg% or higher, and the presence of 40% lipid-staining cells supported a gestational age of more than 37 weeks. There were no false positives given by this method; however, 5 infants were falsely predicted to be premature when, in actuality, they were at least 37 weeks of gestational age. The error in prediction was found to be caused by low percentages of lipid-staining cells, and a hemocytometer now is being used to improve accuracy. (3 refs.) *R. K. Butler.*

*2500 North State Street
Jackson, Mississippi 39216

1098 ZAPOL, WARREN M.; KOLOBOW, THEODOR; PIERCE, JOSEPH E.; VUREK, GERALD G.; & BOWMAN, ROBERT L. Artificial placenta: Two days of total extrauterine support of the isolated premature lamb fetus. *Science*, 166 (3905):617-618, 1969.

Because the fetus is unstable under most conditions of physiological experimentation, a technique of total support using isolated fetal perfusion was devised and proved to be stable for many hours. Fetal lambs, near term, were placed in a bath of synthetic amniotic fluid and maintained by cleansing gases in a silicone membrane lung. In addition, they received a constant infusion of nutrients, heparin, and antibiotics. Fetuses in 4 of 8 attempts survived for more than 20 hours--one lived 55 hours. A large number of physiological measurements were possible as the fetuses remained in a stable state for many hours. (7 refs.) - *W. Klein.*

National Heart Institute
Bethesda, Maryland 20014

1099 CADE, J. F.; *HIRSH, J.; & MARTIN M. Placental barrier to coagulation factors: Its relevance to the coagulation defect at birth and to haemorrhage in the newborn. *British Medical Journal*, 2(5652):281-283, 1969.

The placental barrier to coagulation factors VII and X and to fibrinogen is nearly complete as shown by large differences between maternal venous and neonatal umbilical arterial and venous blood levels. In term infants, all values except factor V are markedly lower than normal adult values. Premature infants have an even more definite deficiency of coagulation factors with prolonged prothrombin time and kaolin partial thromboplastin time which is proportional to immaturity. Death of premature infants may be associated with a severe coagulation deficiency and may be due to cerebral hemorrhage. Assessment of the coagulation system is recommended as a prophylactic measure in low birth-weight infants. (15 refs.) - *L. S. Ho.*

*University of Melbourne
Melbourne, Australia

1100 PHILIP, ALISTAIR G. S.; YEE, ANN B.; ROSEY, MOOTHEDAN; SURTI, NERGESH; TSAMTSOURIS, A.; & INGALL, DAVID. Placental transfusion as an intrauterine phenomenon in deliveries complicated by foetal distress. *British Medical Journal*, 2(5648):11-13, 1969.

A pathological prenatal placental transfusion was found to be associated with asphyxia and neonatal distress in 10 infants who had their umbilical cord clamped less than 60 seconds after delivery of the chin and more than 10 seconds before the first breath. These infants, whose residual placental volumes were less than 55 ml, were compared with 20 control infants whose volumes were greater than 55 ml, and the former group showed a higher incidence of fetal distress (change in heart rate and/or meconium staining) and a lower Apgar score. Placental transfusion was assumed to take place before the onset of infant respiration and this early volume shift may be of significance in the development of neonatal distress; however, the mechanism remains unclear. (12 refs.) - *E. L. Rowan.*

Boston City Hospital
Boston, Massachusetts 02118

1101 ADINOLFI, MATTEO, ed. *Immunology and Development* (Clinics in Developmental Medicine Number 34). London, England, Spastics International Medical Publications, 1969, 187 p. $9.50.

The natural selection theory of antibody formation uses the concept that antigen selects from among a diversified population of responsive cells to explain or predict most known features of the immunological response. The maturation of the genetic mechanism which controls the synthesis of proteins involved in the immune response is almost completed prior to birth, and the timing with which the human neonate rejects allografts is comparable to that of the human adult. Both fertilization and implantation seem to involve antigen-antibody type reactions. After implantation, a whole complex of different types of immunological reactions develop between the mother and the conceptus. Although the fetus avoids homograft rejection under normal circumstances, abortion may result from maternal reaction against paternally-inherited components of the embryo. The development of tumors of the trophoblast may be because of a depression of normal maternal immunological responses. A classification of immune defects includes criteria for defects of neutrophil, humoral antibody, lymphocyte, thymus, lymph nodes, spleen, jejunal villi, and bone marrow functions as well as extensive clinical patterns of immune deficiency. Data on the immunological relationship between the mother and fetus in humans emphasize the effects of fetal red cells on the mother. A discussion of the immunoglobulins in primitive and less primitive vertebrates is included. This summary of the most important advances in the immunologic aspects of ontogenetic and phylogenetic development would be of interest to pediatricians, biologists, immunologists, and physiologists. (939 refs.) - *J. K. Wyatt.*

CONTENTS: The Nature of Immunological Response (Talmadge); Ontogenesis of Immunoglobulins and Components of Complement in Man (Adinolfi & Wood); Phylogeny of Immunoglobulin Structure (Clem & Leslie); Immunological Processes in Mammalian Reproduction (Billington); Primary Immune Paresis (Hobbs); The Immunological Relationship Between Mother and Fetus (McConnell).

1102 STEINER, B. Immunoallergic lung purpura treated with azathioprine and with splenectomy and azathioprine. *Helvetica Paediatrica Acta*, 24(4):413-419, 1969.

Two of 3 patients with immunoallergic lung purpura (IALP) were treated successfully with

azathioprine. The third patient did not respond to the drug. IALP is a monosystemic immunoallergic disease in most patients; however, it can be a polysystemic autoimmune disease in others. The first patient, a 16-year-old boy, was treated unsuccessfully with prednisolone, and dexamethasone. When azathioprine was added to the treatment regimen, the disease ameliorated. The second case, an MR boy, was treated successfully by a splenectomy at age 6 years and by azathioprine at age 15 years. Methotrexate now is being used on the third patient, an infant boy who was unresponsive to other drugs. (26 refs.) *F. J. McNulty.*

Postgraduate Medical School
Budapest, Hungary

1103 RICKARD, K. A.; ROBINSON, R. J.; & WORLLEDGE, SHEILA M. Acute acquired haemolytic anaemia associated with polyagglutination. *Archives of Disease in Childhood*, 44(233):102-105, 1969.

The red cells of a 14-month-old boy with Down's syndrome who developed severe hemolytic anemia during the course of bilateral bronchopneumonia were found to be agglutinated by anti-A, anti-B, and anti-A+B serum as well as by the serum from AB Ss. Pathogenic organisms were not cultured from a cough swab. The child recovered after 2 transfusions and became hematologically normal. Polyagglutination seems to be the cause of the hemolytic anemia in this case. (22 refs.) *L. S. Ho.*

Saint Elizabeth Hospital
Brighton, Massachusetts

1104 RUBIN, HARVEY M.; KRAMER, ROBERT; & DRASH, ALLAN. Hyperosmolality complicating diabetes mellitus in childhood. *Journal of Pediatrics*, 74(2):177-186, 1969.

Hyperosmolar diabetic coma, a syndrome which usually occurs in elderly patients, was observed in 6 children (CA 6 wks to 6 yrs and 11 mos) with no previous history of diabetes. Four of the children (2 with Down's syndrome) had pre-existing serious neurological deficits. A family history of diabetes mellitus was found in 4 patients. Acidosis and extreme dehydration occurred in all the patients, but ketosis was minimal. Hyperosmolality may be a significant factor in the diabetic deaths which occurred in 4 of the children. (33 refs.) - *L. S. Ho.*

Children's Hospital of Pittsburgh
Pittsburgh, Pennsylvania 15213

1105 PEDERSEN, EJNER. *Spasticity--Mechanism, Measurement, Management*. Springfield, Illinois, Charles C. Thomas, 1969, 130 p. $7.75.

The stretch reflex arc is used as a framework to explain the mechanisms involved in the pathophysiology of spasticity. The quantitative measurement of relevant parameters is delineated to describe the various types of spasticity. Spasticity is considered to be a condition with increased stretch reflex because its manifestations of augmented tendon jerks, increased resistance to passive movement, and clonus are also features of increased reflex arc. Spasticity must be quantitatively measured to indicate its severity and measure the effects of treatment. Objective measures are provided by measuring the stretch-response relation and the H reflex. Among the methods of treatment for spasticity are pharmacotherapy, physical therapy, chemical destruction, and surgical treatment. Several types of treatment may need to be combined--if one type is insufficient or has side effects which are too conspicuous. Chemical destruction is preferred over surgical measures for severely affected patients because it is less taxing. Choice of therapy should be based on close analysis of the clinical factors. This book would be of interest to physicians, pharmacologists, physiologists, biochemists, and physical therapists. (428 refs.) - *J. K. Wyatt.*

CONTENTS: Anatomy and Physiology of the Stretch Reflex; Clinical Aspects of Spasticity; Measurement of Spasticity Management.

1106 ANDERSON, J.; CUNLIFFE, W. J.; ROBERTS, D. F.; & CLOSE, H. Hereditary gingival fibromatosis. *British Medical Journal*, 3 (5664):218-219, 1969.

An 18-year-old, MR girl with hirsutism since puberty was also noted to have marked hypertrophy of the gingival mucous membranes. Biopsy showed an increase in submucosal fibrous tissue compatible with the diagnosis of hereditary gingival fibromatosis. Additional investigation showed abnormalities of the

cervical spine, doughy skin, and multiple nevi. Although this condition is usually transmitted as a dominant trait, pedigree studies of 4 generations showed no other affected family members. This case of gingival fibromatosis must, therefore, represent a new mutation. (5 refs.) - *E. L. Rowan.*

University of Newcastle upon Tyne
Newcastle upon Tyne NE 1 4LP, England

1107 KONIGSMARK, BRUCE W. Hereditary deafness in man. *New England Journal of Medicine*, 281(15):827-832, 1969.

There are 12 different hereditary diseases in which there is an association between hearing loss and disease of the skeletal system. The various skeletal abnormalities include symphalangism, craniostenosis, facial deformities, abnormalities of the extremities, and dysgenesis of bone. The oto-palato-digital syndrome, characterized by a cleft small palate, mild dwarfism, abnormalities of the hands and feet, skeletal abnormalities, moderate conductive hearing loss, and a characteristic facies is the only one which involves MR. There are also 3 hereditary diseases in which there is an association between renal disease and hearing loss (of which Alport's disease is the most widely known), 2 hereditary diseases in which hearing loss is associated with goiter, and 2 hereditary dieases with hearing loss associated with cardiovascular disease; however, none of these diseases includes MR as a characteristic. (37 refs.) - *M. G. Conant.*

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1108 HENDERSON, S. A.; & EDWARDS, R. G. Chiasma frequency and maternal age in mammals. *Nature*, 218(5136):22-28, 1968.

As the maternal age of mouse oocytes increases, there is a decrease of chiasmata frequency, a change in their location on the chromosome, and an increase in univalent formation frequency. Many of the univalents exhibited a nonchiasmatic association, and this may be relevant to the etiology of Down's syndrome in older mothers. (35 refs.) *A. Clevenger.*

No address

DEVELOPMENTAL ASPECTS--PHYSICAL

1109 SOLOMON, AMIEL H. *Motivational and Repeated Trial Effects on Physical Proficiency Performances of Educable Mentally Retarded and Normal Boys. (IMRID Behavioral Science Monograph No. 11.)* Nashville, Tennessee, Institute on Mental Retardation and Intellectual Development, 1968, 157 p.

The performance of normal boys was superior or equal to the performance of public school EMR boys and institutionalized EMR boys in 5 physical proficiency tests performed under 3 different motivational conditions. The mean IQ (102) for the 27 normal boys was significantly greater (p=.05) than the mean IQ (69) for the 27 public school EMR boys and the mean IQ (60) for the 27 institutionalized EMR boys. The standing broad jump, 50-yard dash, shuttle run, softball throw, and bent-arm hang comprised the physical tests. Incentives used with the test were basic motivation which was prior instruction only, prior instruction plus continuous verbal encouragement, and prior instruction plus continuous verbal encouragement with material reward. Each incentive condition was used with a different third of each major group. The performance of both MR groups on the condition of continuous verbal encouragement with material reward was consistently better than their performance and equal to the performance of the normal group on the condition of prior instruction plus continuous verbal encouragement. Therefore, it was speculated that retardates have a better response to material than to verbal reinforcement. During the condition of prior instruction plus continuous verbal encouragement with material reward, the institutionalized EMR group performed significantly better (p=.05) than did

the public school EMR group on the best-arm hang, standing broad jump, and 50-yard dash. Regression curves of performance trends over trials for the normal and MR groups did not differ significantly. (42 refs.)
J. Boering

1110 CHERNIK, E. S. Vynoslivost' v otnoshenii staticheskikh usilii u umstvenno otstalykh detei (Endurance of static strength in mentally retarded children). In: D'yachkov, A. I. *Materialy Nauchnoi Konferentsii po Defektologii (Materials of a Scientific Conference on Defectology)*. Moscow, Union of Soviet Socialist Republics, Academy of Educational Sciences Press, 1962, p. 75-80.

The change in age peculiarities of static strength endurance in MR children has a great practical and theoretical interest. Ninety 11- to 16-year-old MR Ss from a remedial school were divided into 2 groups: oligophrenics without visible motor disturbances and oligophrenics with obvious motor disturbances. Three subgroups in each of the classes were nondevelopment of complex forms of cognitive activity with sufficient evenness of main nerve processes, nondevelopment of complex forms of cognitive activity with severe disturbances of the total behavior of the child, and nondevelopment of higher forms of cognitive activity with severe MR. The Ss were told to hold themselves at rest on parallel bars and to hang from the horizontal bar. Comparison of the 2 groups revealed that those Ss in Group 1 had greater endurance than those in Group 2 and that the hanging position was more difficult. As the severity of the defects increased, endurance decreased. Comparison of MR Ss with normal Ss showed that MRs were always a little deficient in endurance from the ages of 11 to 14 than were the normals. While the normal Ss endurance continues to grow at ages 15 to 16, that of MR Ss decreased somewhat. Children with a different degree of psychic defect develop different endurance to static stress--the more severe the defect, the less endurance they have. (No refs.) - *R. K. Butler.*

1111 STIMSON, CYRUS W.; KHEDER, NOBLE; HICKS, RONALD G.; & ORLANDO, ROBERT. Nerve conduction velocity and H-reflex studies in two groups of severely retarded children. *Archives of Physical Medicine and Rehabilitation*, 50(11):626-631, 1969.

Conduction velocity of ulnar, median, and peroneal nerves and the ease with which the H-reflex is elicited in the intrinsic hand and foot muscles may be used to determine when children with retarded motor development are ready for training programs and to assess the therapies advocated for hyperkinesis and hypertonia in children with histories of neonatal asphyxia. Nerve conduction velocities for the 20 mongoloid infants (age 2-17 wks) are lower than those for nonmongoloid infants, and the H-reflexes are easily elicited in all 3 peripheral nerves. Nerve conduction velocities in the mongoloid infants do not reach the level of older mongoloid children until the end of the second or third year of life, and the H-reflex in thenar muscles in 1/3 of these children can still be elicited; thus, a mongoloid child is probably not ready for training in self-care skills until the age of 2 or 3 years. In 20 children with histories of neonatal asphyxia (age 7-18 yrs), the conduction velocities are in the lower section of the normal range. The ease with which H-reflex can be elicited is dependent on the severity of cerebral palsy and the degree of hyperkinesis and hypertonia at the time of testing. (7 refs.) - *L. S. Ho.*

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1112 STINE, OSCAR C.; SARATSIOTIS, JOHN B.; & FURNO, ORLANDO F. Children in the extremes of physical and psychological measurements. *Journal of School Health*, 39(9): 636-641, 1969.

Analysis of the relationship of developmental measures obtained from 776 children (374 males, 402 females, 193 white, and 583 nonwhite) from deprived areas showed meaningful associations between height, weight, and head circumference. Results showed that verbal maturity correlated with height at the upper range of the distribution but not at lower levels; this may be due to factors such as verbally immature children who have other problems which are not dependent upon their general growth. Children with large head circumferences were found more often than expected among those with "high index of neurological suspicion." Those Ss in the lowest tenth percentile in the measurement of hematocrit demonstrated twice the expected representation in the group of children below the tenth percentile on the Columbia Mental Maturity Scale. Children with a large head circumference also had more errors in their performance on the design recognition test. Reliance upon multiple measurements, especially the extremes of physical and psychological measures, should aid in evaluation procedures. (10 refs.) - *B. Bradley.*

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1113 CLARK, J. (Mrs.) The added handicap of overweight. *Intellectually Handicapped Child*, 8(4):8-9, 1969.

MRs have enough handicaps and should be spared the additional handicap of overweight, a discomfort and a health hazard. Parents of MRs, inclined to compensate for what their child has missed in life, should exercise restraint in giving the child ice cream, candy, and soft drinks. Such treats not only dull the appetite for better foods but readily form excess fat. Overeating is a danger to MRs who cannot always associate quantities and qualities of food with indigestion and weight gain. Another threat is the MRs' sedentary tendency, because the less exercise they perform the more fat they store. MRs should engage in more sports, walking, and hiking. Proper diet and exercise will improve the MRs' appearance and increase their enjoyment of life. (No refs.)
C. L. Pranitch.

No address

1114 HAMILTON, WILLIAM. Abnormal height in children. *Developmental Medicine and Child Neurology*, 11(4):521-524, 1969.

Height to some degree can be controlled by proper treatment of pathological processes that cause growth impairments. Tallness is less common than the complaint of shortness in stature. For tall children, those with rapid growth, elective surgical treatment, cryohypophysectomy, can be instituted if early indications are that the child has high plasma growth hormone levels created by a small pituitary eosinophil adenoma. Intrauterine retardation of growth, emotional deprivation, lack of adequate nutrition, and growth hormone deficiency that is isolated are the prime causes for short stature. It is important that treatment commence prior to puberty. More research is needed regarding the total effects of the anabolic hormones before it can be suggested that physicians use them in children unless the practitioner is equipped with appropriate facilities to monitor the overall effect of the hormones on the child's biological system. (19 refs.)
S. Half.

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Glasgow, Scotland

1115 HOHENAUER, LEONHARD; & *OH, WILLIAM. Body composition in experimental intrauterine growth retardation in the rat. *Journal of Nutrition*, 99(1):23-26, 1969.

The chemical body composition of normally developing fetal rats was compared with the composition of experimentally induced intrauterine growth retarded rats (IUGR), and the IUGR rats had lower body weight, higher water composition, less protein, and less fat. The normal values were established by delivering fetal rats at 17, 19, and 21 days for chemical analysis of body composition. Intrauterine growth retardation was achieved by ligating the uterine artery of one uterine horn at 17 days of gestation in 5 female rats and allowing the pregnancies to continue to the twenty-first day. In normal rats during the last 5 days of intrauterine life, the body weight increases 6-fold, the water weight decreases, and fat, protein, calcium, and phosphoros increase. In IUGR rats, the body weight at 21 days is 24% lower and the body water is 0.5% higher than those of controls. Fat and protein contents are lower in IUGR rats. The placentas of the IUGR and control rats were similar in composition. The cause of these changes may be due to the decreased perfusion of the placenta with resulting decrease in absorption. Thus, the clinical impression of body wasting and loss of subcutaneous fatty tissue in human IUGR babies was supported by chemical analysis of IUGR rats. (8 refs.) - *W. Klein.*

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1116 COWIE, VALERIE A. *A Study of the Early Development of Mongols.* (Institute for Research into Mental Retardation, Monograph No. 1.) New York, New York, Pergamon Press, 1970, 110 p. $8.00.

Deviant patterns of neurological development during the first 10 months of life in 79 children with Down's syndrome included: hypotonia; delayed dissolution of early reflexes and automatisms, abnormal or deficient responses with regard to the traction response, position in ventral suspension, and patellar jerk; and frequent strabismus. Neurological variations became progressively more definitive and clear-cut with age, and there was a progressive deterioration in psychological performance over the 10-month period. High positive correlations between low psychological scores both with each other and with neurological variables at the end of the observation period provided strong support for a relationship between neurological

functioning and psychological performance. The main components identified by a principal component analysis were a general mongoloid quality characterized by neurological deficit and delayed dissolution of early reflexes, strabismus, and variation in balance between mental and physical retardation. The clinical picture became more stabilized as the children grew older, and individual children exhibited marked deviation on neurological and psychological tests, particularly after the age of 8 or 9 months. Psychological variables were the Piaget Sensori-Motor Scale and the Nancy Bayley Scale. Neurological data were obtained from routine neurological examinations which included observations of early reflexes and automatisms of infancy. This book would be of interest to neurologists, psychologists, geneticists, biochemists, psychiatrists, and pediatricians. (53 refs.) - *J. K. Wyatt.*

CONTENTS: General Outline of the Study; The Basis for Sampling; Birth-Weight and Conceptional Maturity; Chromosomal Findings; Familial Mongolism in the Series; Deaths in the Series; The Scheme for Neurological Examination; Muscle Tone; The Traction Response; Ventral Suspension; The Moro Reflex; Palmar Grasp and Plantar Grasp; Automatic Stepping; Patellar Reflex; The Placing Reaction; Strabismus; Analysis and Statistical Treatment of Results; Statistical Analysis Using IBM Punched Cards; Results of Intercorrelational Testing between Psychological Scores; Correlational Analysis; Principal Component Analysis by Computer; Summing Up.

1117 JOSEPH, MICHAEL; & DAWBARN, CAROL. *Measurement of the Facies: A Study in Down's Syndrome.* (Spastics International Medical Publications Research Monograph No. 3.) Kingswood, England, William Heinemann Medical Books, 1970, 111 p. $7.50.

Quantitative measurement of facial characteristics of Down's syndrome showed that the generally accepted clinical impressions were confirmed only in part, that some frequently used criteria are not really discriminatory, and that other criteria of great discriminative value were ignored by clinicians. The technique of measurement was based on the wax modeling. The diagnosis of all Down's syndrome patients was confirmed cytogenetically, and the facial components of 20 mongoloids and 20 controls were compared. Features significantly different among the 2 groups were flat and short bridge of the nose, flat apex of the nose, anteverted nostrils, prominent cheeks near the tragion, and flat cheeks near the nose. Although the mean values for many components showed significant differences, the actual sample values exhibit a good deal of overlap. Down's syndrome children were subject to as wide a range of individual variation as the normal children, in contrast to the generally accepted "family likeness" of Down's syndrome children. The similarities between the facies of Down's syndrome and that of the Asiatic, such as brachycephaly and epicanthus, are much less than has been supposed. The most prominent characteristics of Down's syndrome are not found among the Asiatic, namely short narrow head, depressed nose, forward-facing nostrils, and heavy-lidded eyes. Nor are the main features of the Asiatic found in Down's syndrome, namely broad head, prominent cheekbones, widely-separated eyes, and characteristic eye-fold and upper lid. (117 refs.) *L. S. Ho.*

CONTENTS: Historical Introduction; The Design of the Study; Results and Discussion; The Use of Facial Measurement.

1118 JOHNSON, RONALD C.; & ABELSON, ROBERT B. Intellectual, behavioral, and physical characteristics associated with trisomy, translocation, and mosaic types of Down's syndrome. *American Journal of Mental Deficiency*, 73(6):852-855, 1969.

The intellectual, behavioral, and physical characteristics of various etiologic groupings of Down's syndrome were compared. The Ss were drawn from 5 state institutions from 13 western states. A total of 254 trisomy, 21 translocation, and 18 mosaic types were identified by karyotyping. Intellectual measures were obtained from institutional records, and ratings of behavior were obtained from a 22-item checklist. Translocation Ss were significantly brighter (mean IQ=37.8) than either trisomy (IQ=32.1) or mosaic (IQ=28.9) Ss who did not differ from each other. A sign test indicated that translocation Ss were higher than trisomy or mosaic Ss on measures of activity and aggression. No significant differences between the groups were found for psychotic or sexual behavior, nor were there significant differences in the number or kind of 14 physical characteristics studied. (4 refs.) - *J. M. Gardner.*

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1119 Slow development marks first year for mongoloid-like chimp. *Journal of the American Medical Association*, 210(1):22-23, 1969.

The first recorded case of a primate with clinical, behavioral, and cytogenetic features of mongolism is reported from Yerkes Regional Primate Research Center. This offspring of apparently normal parents is neurologically retarded, has prominent epicanthal folds, hyperflexibility of the joints, and hypotonia. This may provide scientists with the opportunity to learn more about Down's syndrome. (No refs.) - *E. F. MacGregor*.

DEVELOPMENTAL ASPECTS--MENTAL

1120 BLOUNT, WILLIAM R. STM in retardates as a function of direction and delay of recall. *Psychonomic Science*, 14(2):69-70, 1969.

During 4-second delay paired-associate (PA) learning, 12 MR Ss made a significantly greater number of errors than matched MRs in the 2-second ($p<.05$) or 0-second ($p<.025$) delay PA learning groups. The 6 associative pairs were familiar objects presented in pictorial form. Three of the pairs were used in forward (left-right) learning and the other 3 in reverse; also they were counter balanced, thus creating 2 different 6-pair lists. The Ss were required to name the pictures in each pair and then recall one picture when the other was presented after no (0-sec delay), one (2-sec delay), or two (4-sec delay) colored cards were inserted. Each S learned one list to a criterion of 5 consecutive errorless trials. Dependent variables were the number of Trial-1 errors, total errors, and trials-to-criterion. Since all groups made significantly ($p<.01$) more errors in forward learning during Trial 1 only, PA short-term memory apparently becomes bi-directional after the initial associative phase. In addition, multiplicative instead of linear relationship may exist between errors and delay of recall since 65% of the total errors occurred during 4-second delayed PA learning. (7 refs.) - *J. Boering*.

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1121 WOODCOCK, RICHARD W.; & CLARK, CHARLOTTE R. *Influence of Presentation Rate and Media on the Comprehension of Narrative Material by Adolescent Educable Mental Retardates*. Nashville, Tennessee, Institute on Mental Retardation and Intellectual Development, Volume 5, Number 7, 1968, 27 p.

Comprehension differences in 141 adolescent EMRs (MA 9 to 11 yrs) can be related to the type of media used and the speed at which the material was presented. Narrative material was presented *via* reading, listening, and listening while viewing correlated slides. Material was presented at speeds ranging from 53 words/minute to 378 words/minute. It was predicted that the listening with slides presentation would provide for greatest comprehension while presenting material between the speed of 228-278 words/minute would be the most efficient with respect to the amount of learning per unit of time spent in the learning situation, although highest performance would actually occur at the lowest rates of presentation. Analysis of variance indicated a definite superiority of the listening with slides technique ($p<.001$). Also confirmed was the hypothesis regarding learning efficiency rates, both the immediate recall and one week retention ($p<.05$); however, there was little support for the hypothesis that performance decreased at higher rates of presentation. Generally, higher scores were obtained at lower word/minute rates with a drop in performance at higher rates; although, there were wide fluctuations. Educators

should capitalize on the listening-viewing medium to a greater extent than is presently done. (6 refs.) - *K. H. Vogt.*

1122 SMITH, JEROME. Presentation mode differences in the auditory discrimination of retarded children. *Psychonomic Science*, 16(2):65-67, 1969.

A S-R spatially contiguous presentation mode appeared to produce better auditory discrimination learning in MRs than simultaneous, successive, or S-R noncontiguous modes. The Ss were 44 institutionalized male and female MRs (mean MA 81.6 mos; mean IQ 54.1) who had prior experience in simultaneous visual discrimination experiments. Stimuli were presented in a modified Wisconsin General Test Apparatus. Sound tapes which consisted of 60-second "junk" sounds differed on several stimulus dimensions. The pool of sounds included a dog bark, a boat whistle, the gallop of horse hoofs, a siren, the clash of a cymbal, and a buzzer. Preprogramed tapes contained 3 binaural and 3 monaural presentations. Stimulus pairs for both conditions were whistle-bark, gallop-cymbals, and buzzer-siren. All Ss received 25 trials daily and criterion was set at 20 correct responses out of 25 trials. The significance of the effect of S-R spatial contiguity as opposed to separateness was between .05 and.10. (5 refs.) *J. K. Wyatt.*

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1123 BONSETT, ANDREA; ROSS, DOUGLAS; & KELLY, CORNELIA. Visual reaction time in normal and handicapped children. *Perceptual and Motor Skills*, 28(1):157-158, 1969.

Reaction speeds of 6 normals (CA range 10 to 13 yrs) to onset of a light stimulus were significantly faster and less variable ($p<.05$) than those of 6 TMRs (CA range 10 to 13 yrs). Each S was instructed to press a button immediately after a light appeared. Five practice trials and 20 test trials were given. Mean and variance reaction times were calculated for each S. Verbal reward was given intermittently, particularly to the MRs whose hand often had to be physically replaced on the table. Both groups exhibited nervousness and exasperation. The results support data on older handicapped groups. (7 refs.) *A. Huffer.*

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Monmouth, Illinois 61462

1124 HOUSE, BETTY J. Effects of similarity of discrimination problems on learning and retention in retardates. *Journal of Experimental Child Psychology*, 6(4):571-584, 1968.

An investigation of transfer relations between well-learned habits and the acquisition and retention of new discrimination problems showed prior training beneficial to subsequent similar single discrimination problems and detrimental to multiple discriminations (where interference may be reduced through separation of similar items). Thirty-three Ss (mean IQ 59, mean MA 89 mos) were pretrained on discrimination problems with either color (C), form (F), or both (C-F) being the relevant dimension. Eight different test problems assessed performance when new problems were introduced on the same relevant dimension (ID-intra-dimensional shift), on different relevant dimension (ED-extra-dimensional shift), or where only 1 or 0 component of a compound stimulus was previously rewarded. Learning and short-term retention were assessed through the interpolation of 0 or 1 training trials, respectively, during test. Performance on all problems varied as a function of 0 or 1 interpolations after alternation or nonalternation of reward position. ID-ED differences supported the contention that ID problems might be forgotten faster. Compound stimuli groups experienced less retention when test and interpolated problems were similar. (15 refs.) - *D. F. McGrevy.*

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1125 BRADLEY, BETTY HUNT. Responses of retarded children on three and two dimensional visual tasks. *Exceptional Children*, 36(3):165-170, 1969.

Differential performance in identifying 3-dimensional objects and 2-dimensional colored pictures by MR children differing in degree of visual-motor handicap illustrates the need for task analysis and teaching materials relating to the individual learning handicaps of each child. Thirty MR children divided into 2 groups based on perceptual functioning in relation to visual-motor tasks--severe visual motor handicap (SVMH); minimal visual motor handicap (MVMH)--were paired on CA, MA, IQ, and length of time spent at the institution. Each S was given 60 seconds to identify verbally each of 90 objects and 90 colored pictures presented randomly. SVMH Ss scored significantly lower on the identification of 3-dimensional objects and had lower total scores than did the MVMH Ss. SVMH Ss did not

differ significantly from MVMH on 2-dimensional picture identification. When the 90 objects and 90 pictures were separated into familiar and unfamiliar categories, SVMH Ss scored significantly lower on the identification of both familiar and unfamiliar objects; however, there were no significant differences between the groups on familiar and unfamiliar pictures. Both groups scored higher in the familiar categories than they did on the unfamiliar categories. The SVMH Ss had significantly more errors with the identification of objects than did the MVMH Ss. Results suggest that the selection of visual materials and the introduction of unfamiliar visual stimuli based on analysis of individual visual learning handicaps are necessary steps in teaching the MR reading and concept formation. (10 refs.) - *D. F. McGrevy*.

Columbus State Institute
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1126 BELMONT, IRA; BELMONT, LILLIAN; & *BIRCH, HERBERT G. The perceptual organization of complex arrays by educable mentally subnormal children. *Journal of Nervous and Mental Disease*, 149(3):241-253, 1969.

Data relating to the perceptual selection and organization of complex arrays by EMR children (CA 8 to 10 yrs) indicate that these Ss were as "perceptually reactive" as are normal control children (CA 9 to 10 yrs) but could not analyze their percepts as adequately. Also, results showed that the EMRs imposed "inappropriate organizations", did not rely much on verbal cues, and appeared not to be as influenced by social interaction as were normal Ss. The responses of the Ss to Rorschach inkblots were analyzed on the basis of perceptual performance and neurological and intellectual assessments were made. Results showed that EMRs did as well as did normals on "complex perceptual stimulus arrays which required them to select and organize their percepts." They seemed as able to react to a complicated perceptual array as do normal children; however, they did not analyze as well "what they had seen into subwholes." There were more gross inaccuracies and distortions in their perceptual analyses. The major factor was the analytic process rather than inattention or poor motivation. The EMRs had less popular percepts than did the normal children, and verbal suggestions did not aid them as much as they did the normals. Their own language was more simple and concrete. Perceptual functioning of EMR children with and without signs of central nervous system damage did not differ except for a significantly greater restriction in breadth of content. (19 refs.) - *B. Bradley*.

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1127 FRITH, UTA; & HERMELIN, BEATE. The role of visual and motor cues for normal, subnormal and autistic children. *Journal of Child Psychology and Psychiatry*, 10(3): 153-163, 1969.

In a test of the interdependence of visual and motor cues for integrated behavior, 2 experiments in which additional visual information was maximized or minimized in perceptual motor tasks (performable on the basis of motor cues) showed that autistic children (N-20) made relatively less efficient use of visual cues and relatively more use of motor feedback than did TMR (N=20) or normal (N=20) children. The apparatus for Experiment I resembled a vertically oriented jig-saw puzzle presented in conditions where visual cues were maximized, intermediate, or minimized and line patterns were of high or low redundancy. In Experiment II, a stylus (a toy car affixed to its top) was tracked through 3 of 5 tracking grooves (increasing in complexity) and was presented where the visual cues were either present or absent. Maximized visual cues for the jig-saw puzzle task increased performance for all but autistic children. Where visual cues were absent in the tracking task, normals were most impaired and autistic Ss least impaired. (8 refs.) - *D. F. McGrevy*.

No address

1128 WACHS, THEODORE D. Free-recall learning in children as a function of chronological age, intelligence, and motivational orientations. *Child Development*, 40(2):577-589, 1969.

Free-recall learning is better accomplished by older than by younger Ss and by those with superior IQ (>115) than those with low IQ (<90); and extrinsic motivation seems to inhibit this learning. The Ss were 216 public school children (72 fourth graders, 72 eighth

graders, 72 twelfth graders); in each group, 1/3 had IQs >115 (mean 123), 1/3 had IQs between 95-110 (mean 104), and 1/3 had IQs <90 (mean 84); in addition, 1/3 of each group was intrinsically motivated, 1/3 was extrinsically motivated, 1/3 was mixed motivated. Five lists of the same 50 common nouns in different orders were played by a tape recorder to each class, and after the playing of each list, the Ss recorded as many words as they could remember. The eighth and twelfth graders recalled significantly more words than the fourth graders; however, there was no significant difference between the eighth and twelfth graders. Age improves verbal learning until perhaps the sixth grade. There was a significant difference in recalled words between the superior and low IQ groups, but no significance between the low and average or average and superior groups. Extrinsically motivated Ss remembered fewer words than did the intrinsically and mixed motivated Ss, although the differences were not significant. (27 refs.) - *M. Plessinger.*

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1129 BOUCHARLAT, J.; & MAITRE A. Reflexion sur l'origine instinctive de l'imitation, a propos d'une observation de microcephalie primitive (Considerations on the instinctive origin of imitation, with reference to primitive microcephaly). *Annales Medico Psychologiques*, 127(5):687-689, 1969.

In contrast to many other MR Ss, a 9-year-old girl with microcephaly showed good muscular coordination and ability to imitate movements. However, these movements were apparently instinctual and were forgotten if they were not repeated often enough to become a habit. This shows that, although imitation is instinctual, it does not contribute to learning unless intellectual capacities are involved. (No refs.) - *S. L. Hamersley.*

No address

1130 McGHIE, ANDREW. *Pathology of Attention.* Baltimore, Maryland, Penguin Books, 1969, 192 p. $1.65.

The attention spans of neurotics, psychotics, schizophrenics, brain-damaged, and MRs have been studied. Research indicates that learning impairment of MRs may be due to poor short-term retention, a lowered capacity to maintain reverberatory neural circuits, and impairment at the input stage. Learning by MRs may also be impaired because of their inability to focus attention on relevant stimulus features. Alerting signals have had no effect on reaction time of the Ss, but visual reaction times improved with an increase in intensity of reaction signals. Differences in reaction times, vigilance performances, and the effect of distraction between familial and determinate brain-damaged defectives have been found. Distractibility was not a factor in MR. During vigilance watches, MR Ss showed earlier and more rapid decrement in performance. Attentional dysfunction in brain-damaged Ss is partly due to a slowing down in the rate at which information is processed. Schizophrenic Ss are prone to heightened distractibility, failure to pursue required mental sets, and abnormal levels of arousal. Except for reports on arousal level, few studies of neurotic attention are available. (270 refs.) - *V. G. Votano.*

CONTENTS: Psychological Models of Attention; The Neuroses and Psychopathy; The Affective Psychoses; Schizophrenia; Organic Brain Damage; Mental Deficiency (Subnormality).

1131 SENN, MILTON J. E.; & SOLNIT, ALBERT J. *Problems in Child Behavior and Development.* Philadelphia, Pennsylvania, Lea and Febiger, 1968, 268 p. $8.50.

The philosophy and methods of approaching problems in family and child behavior described in this book are used at the Yale Child Study Center. Emphases are on the management of full-blown life situations and preventive measures. The theoretical approach is eclectic and developmental and based on an applied version of Freudian psychoanalytic principles and Piaget's cognitive learning and social development concepts. The normal behavior of the infant, child, and parent is described for each stage of development. A schema of developmental charts approximate dynamic and viable developments in parent and child at each stage and describe tasks in progress, acceptable behavioral characteristics and minimal and extreme psychopathology. Among the therapy methods described are individual counseling, group meetings, family unit counseling, genetic counseling, play therapy, and drug usage. Infantile autism and childhood schizophrenia are described as conditions characterized by marked developmental retardation. Long-range predictions about the mental development of children with the physical characteristics of Down's syndrome, microcephaly, disturbances in amino acid, carbohydrate, endocrine, and pigment metabolism, and chromosomal anomalies should be based on the individual case and should

involve a period of observation during which sequential developmental assessments are accomplished. This book would be of primary interest to pediatricians as well as to other professionals interested in the improvement of child health and care. (32 refs.) *J. K. Wyatt.*

CONTENTS: Introduction and Theoretical Considerations; Pregnancy; The Newborn and Young Infant; The Older Infant; The Toddler and Pre-School Age; School Age and Pre-Adolescence; Puberty and Early Adolescence; Pediatric Evaluation; Therapeutic Management; Paramedical Support in Pediatric Practice; Special Problems.

1132 FIEDLER, MIRIAM FORSTER. *Developmental Studies of Deaf Children.* (ASHA Monographs, Number 13.) Washington, D. C., American Speech and Hearing Association, 1969, 172 p. $4.00.

A longitudinal study of developmental and learning problems was made of 20 students attending a residential oral school for deaf Ss. School problems for all Ss were complicated by separation trauma; children were handicapped by being away from families and living in structured dormitory settings. Early separation should be studied with, perhaps, the idea of alternate solutions to residential schools. Boys were more classroom handicapped than girls. One third of the Ss were multiply handicapped with either neurological or emotional problems. At ages 15 and 16 years, the 3 lowest achievers were retarded to 6 to 7 years on standardized achievement tests; their MAs varied from superior to slow-normal. Of 6 below-average achievers, 4 had emotional problems. Both groups would have benefited from early differential diagnosis and follow-up by a team of experts. To date, few deaf schools can offer differentiated curriculum, although some do have classes for MR or aphasic children. Upon entering school, some Ss were not ready for a formalized learning situation. The young deaf need rich backgrounds of experience and emotional security before progressing to structured classrooms. Many benefited from therapeutic play sessions. New ways to teach reading could be borrowed from new educational programs for hearing children with learning problems. Reader audience: researchers, psychologists, speech and hearing specialists, aural physicians, and administrators of schools for the dear. (56-item bibliog.) - *S. Markworth.*

CONTENTS: Plan of the Studies; The Three Best Achievers; The Three Poorest Achievers; The Below-Average Achievers; The Hard-of-Hearing Students; Students with Average Academic Achievement; Sex Differences in Achievement and Summary of Johns Hopkins Data.

1133 WYATT, GERTRUD L. *Language Learning and Communication Disorders in Children.* New York, New York, Free Press, 1969, 372 p.

Language development in the child is a continuing process which is dependent on maturation, physiological functioning, socioculturral factors, and the kind and frequency of verbal stimulation provided by available interpersonal relationships. The critical period of language development lies between the ages of 2 and 5 years, and the development of stuttering may be related to developmental crisis. Case histories and studies of cultures in which a mother or mother-substitute served as the primary love object and speech model for the young child indicated that language development tended to be facilitated by certain forms of mother-child interaction and hindered by others. Severe articulation disorders were significantly (.05) related to insufficient auditory stimulation and auditory feedback in the home. Although children with multiple motor-perceptual and language disabilities are a special population, they have highly specific developmental and learning problems and differ markedly from each other. Their education requires early identification, transitional training for the improvement of primary sensory-motor and learning skills, professional assessment and diagnosis, and flexible education and training. Communication disorders include all the manifestations of language as well as preverbal and nonverbal modes of interaction. Primary and secondary prevention measures require an understanding of the interpersonal aspects and time scale of language development, observations of motor skills and general behavior, parent education on the importance of appropriate stimulation and corrective feedback as well as the dangers involved in prolonged mother separation during the critical periods of language development, and early intervention when communication disorders develop. This book would be of interest to speech therapists, psychologists, teachers, special educators, and pediatricians. (467-item bibliog.) - *J. K. Wyatt.*

CONTENTS: A Model for the Study of Adult-Child Interaction; Debby: A Case of "Hospitalism"; The Case of Nana: From Birth to the Onset of Stuttering; The Case of Nana: The Period of Stuttering, and After; The Case of Nana: Theoretical Issues; Group A: Stuttering Children; Therapy with Stuttering Children and their Parents; Illustration of the

Therapeutic Process; Treatment Results; Administration of Treatment Programs; Group B: Children with Severely Defective Articulation; Group C: Children with Multiple Motor-Perceptual and Language Disabilities, I; Group C: Children with Multiple Motor-Perceptual and Language Disabilities, II; Differential Diagnosis; Children in Need of Compensatory Language Training; Summary: A Comprehensive Approach to Communication Disorders in Children.

1134 GUESS, DOUG. A functional analysis of receptive language and productive speech: Acquisition of the plural morpheme. *Journal of Applied Behavior Analysis*, 2(1): 55-64, 1969.

The independence of receptive (understanding) and expressive (speech) communication was demonstrated for the use of plurals with 2 moderately retarded, adolescent institutionalized boys with Down's syndrome. In Phase I, the Ss were trained to correctly point to objects alone or in pairs depending upon the verbal label (singular or plural noun). Unreinforced probes, interspersed during this phase, indicated no generalization to expressive use of the singular or plural. In Phase II, each S was trained in the expressive use of plurals. In the unreinforced probes for receptive use, the reinforcement contingencies were reversed, with reward for plural responses to singular objects. Both Ss failed to reverse the previous learning, again demonstrating the independence of receptive and expressive communication. The generalization of these results is limited due to the restricted nature of the population. (11 refs.) - *J. M. Gardner*.

Kansas Neurological Institute
Topeka, Kansas 66604

1135 WETHERICK, N. E.; FITZSIMMONS, ELIZABETH K.; & HILLS, D. A. Inductive thinking in subnormals. *Journal of Mental Subnormality*, 15(2):79-84, 1969.

A comparison of the development of a normal child's inductive reasoning capacity with that of 19 public school EMRs and 25 institutionalized SMR and TMR adults suggests that MRs may pass through developmental stages like those of normal children, however, on a very extended time scale. The MRs were presented color problems with positive, negative, and mixed instances on an apparatus for preliterate or non-literate Ss under 2 conditions--presence or absence of knowledge of results. Although the MR adults were matched with normals (data from a previous study) with respect to scores on the Colored Progressive Matrices, their performance was indicative of children much younger than their test scores would suggest. EMR children showed a lower level of performance. MRs may not necessarily be lacking in inductive reasoning capacity but in the ability to distinguish relevant from irrelevant aspects of the situation. (4 refs.) - *D. F. McGrevy*.

University of Bradford
Bradford, England

1136 HELLMUTH, JEROME, ed. *Cognitive Studies: Volume I*. New York, New York, Brunner/Mazel, 1970, 511 p. $12.50.

The papers in this volume place general psychology in the context of development and contain developmental data and theory about growth and cognitive functioning. Trends which are reflected include an emphasis on the problems of early education, involvement with the theories and methodologies of Piaget, emphasis on coping strategies and modes of control, and restatement of some fundamental developmental issues including the interrelationship between heredity and environment. The work of Freud and orthodox psychological doctrine is given reduced emphasis. New findings in the areas of developmental biology, neurochemistry, and neurophysiology focus on a most important type of organic substrata. Increased acceptance of alternative modes of functioning allows for the existence of both incremental learning and stepwise hypothesis testing. Papers on MR analyze the contribution of the investigation of MR to the formulation of cognitive theory and outline a deprivation model to explain the etiology of MR. This book would be of interest to psychologists, neurochemists, educators, sociologists, biologists, neurologists, neurophysiologists, and psychiatrists. (813 refs.) - *J. K. Wyatt*.

CONTENTS: Techniques for the Differential Study of Cognition in Early Childhood (Church); The Initial Coordination of Sensorimotor Schemas in Human Infants: Piaget's Ideas and the Role of Experience (White); Developmental and Experimental Approaches to Child Study (Elkind); A Development Analysis of Learning (Gollin); The Role of Cognition in the Development of Inner Reality (Arieti); Contributions of the Mentally Retarded toward a Theory of Cognitive Development (Kessler); The

Uses of Experience: Open Statements, Ill-Defined Strategies, and Intelligent Information Processing (Reitman); Conceptual Thinking in Young Children as a Function of Age and Social Class Background (Zimiles); Cultural Variations in Cognitive Skills (Goodnow); Concept Studies in Disadvantaged Children (Osler); The Etiology of Mental Retardation: The Deprivation Model (Yarrow); A Review and Perspective on the Thinking of Deaf People (Furth); The Development of Conceptions of Psychological Causality (Whitemen); Some Recent Trends in the Study of Social Judgment (Manis); Experiments on Teaching Piagetian Thought Operations (Kohnstamm); Experimental-Longitudinal Methods and Representative Behavior Sampling in Studying Cognitive Learning (Staats); Tests for the Evaluation of Early Childhood Education: The Cincinnati Autonomy Test Battery (Banta); The Cognitive Curriculum: A Process-Oriented Approach to Education (Covington).

1137 KESSLER, JANE W. Contributions of the mentally retarded toward a theory of cognitive development. In: Hellmuth, Jerome, ed. *Cognitive Studies: Volume I*. New York, New York, Brunner/Mazel, 1970, p. 111-209.

A review of MR research during the last 10 years reveals that increased knowledge about MR has resulted in increased knowledge about normal intellectual processes, the development and structure of the intellect, and the kinds of intellectual skills required to function in American society. Research areas considered include neurophysiological correlates of learning, developmental changes, the relationship between perceptual-motor development and cognitive functioning, the relationship between language and cognitive functioning, individual differences, and the interdependence of affect and cognition. Additional research is needed which will replicate experiments and employ chaining of research methods as well as naturalistic and creative methods. Among the current issues which appear to hold the most promise for child development theorists are pharmacological modification of learning, the effects of remedial and compensatory education on mental development, the relationship between drives and affect in learning, "difference" hypotheses in MR, stage theories of development, and exogenous and endogenous theories on the origin of MR. (327 refs.) - *J. K. Wyatt.*

1138 YARROW, LEON J. The etiology of mental deprivation: The deprivation model. In: Hellmuth, Jerome, ed. *Cognitive Studies: Volume I*. New York, New York, Brunner/Mazel, 1970, p. 275-290.

Investigations of the etiology of MR have moved away from simplistic considerations of the relative importance of heredity or environment toward more complex and comprehensive analyses of the determinants of a wide range of variations in intellectual and cognitive functioning. The most meaningful ways to conceptualize environmental influences are by considering "deprived," "optimal," and "enriched" environments. Major issues in the investigation of environmental influences are definitions of environmental parameters, the determination of the interaction between environmental influences and organismic factors, the degree of specificity of relationships between variations in environmental inputs and specific aspects of cognitive functioning, and the identification of the mechanism through which environmental influences operate. Early environmental deprivation in humans appears to impair attentional processes, activity levels, language skills, and motivation for achievement. Animal studies indicate that the earlier deprivation begins, the more severe the impairment in intellectual functioning. The similarities between American lower-class family environment and deprived institutional environment are conceptually striking. Enrichment studies have identified some specific dimensions of early environmental influences, have emphasized the importance of timing, and have demonstrated the need for an appropriate "fit" between type of experience and a child's developmental level. (31 refs.) - *J. K. Wyatt.*

1139 BABSON, S. GORHAM; HENDERSON, NORMAN; & CLARK, WILLIAM M. The preschool intelligence of oversized newborns. *Pediatrics*, 44(4):536-538, 1969.

The intelligence test scores of 1,288 white, 4-year-olds in the Oregon records of the Collaborative Perinatal Study were compared in order to determine if high birth-weight was associated with an increased risk of MR later in life. A total of 23% of the high birth-weight (>4,100 gm for girls and 4,250 gm for boys) group had Stanford-Binet IQ score < 80 as compared with 10.6% of the standard birth-weight group and 18.2% of the low birth-weight (<2,500 gm) group. Only 2 of these 74

high birth-weight children had other abnormalities (one cerebral palsy and one congenital dislocation of the hips). High birth-weight, then, like low birth-weight, is associated with a higher risk of subsequent MR. (6 refs.) - *E. L. Rowan.*

University of Oregon Medical School
Portland, Oregon 97201

1140 VERNON, PHILIP E. *Intelligence and Cultural Environment*. London, England, Methuen, 1969, 264 p. (Price unknown).

This survey of factors which affect the development of abilities among depressed minority groups or individuals in underdeveloped countries considers: the concept of intelligence; experimental evidence related to the influences of environment on the growth of general intelligence and some other abilities; and the effects of nutrition, childhood stimulation, and school and socioeconomic factors. Poor performance on general or specialized intelligence tests and poor educational performance appear to be related to: linguistic difficulties; anxiety, excitement, and/or suspicion; lack of motivation and unfamiliarity with any test situation; difficulties with the form of test materials and test conditions; and/or brain damage. Genetic factors which enhance test performance seem to be general plasticity and the possession of genes relevant to special abilities. Among the environmental factors related to good test performance are reasonable satisfaction of biological and social needs, perceptual and kinesthetic stimulation, language stimulation and reinforcement, a "demanding-democratic" family atmosphere, a regular and prolonged schooling experience in a "demanding-democratic" atmosphere, a positive self-concept, broad and deep cultural and leisure time interests, and exposure to appropriate methods of overcoming language problems. The major barriers to the fuller realization of human intellectual potential seem to be adult values and child-rearing practices. Radical changes in these areas (as in Soviet Russia) have resulted in a tremendous rise in the average level of environmentally-determined intelligence. Although changes in material conditions are important to the fuller development of human intelligence, changes in attitudes and ways of life are even more important. This book would be of interest to educators, psychologists, sociologists, and special educators. (264-item bibliog.) *J. K. Wyatt.*

CONTENTS: Current Conceptions of Intelligence; Factors Influencing the Mental Development of Children; The Application of Tests in Non-Western Cultures; Studies in Britain; Cross-Cultural Studies; Summary and Implications.

1141 LUCKER, WILLIAM G. The effects of environmental stimulation on the perceptual thresholds of high active and low active mentally retarded persons, from Institution on Mental Retardation and Intellectual Development, Monograph No. 15, August 1970, 120 p.

Measurement of the perceptual thresholds of MRs indicated that there was no difference between 18 high-active and 18 low-active institutionalized MRs who were required to identify 4 common objects presented as pictures at different tachistoscopic speeds. Measures of the thresholds were obtained by the ascending and descending methods approach. The pictures were presented under the conditions of silence, cafeteria noise, and Gaussian noise. Only when initially presented did cafeteria noise have a disruptive effect on the perceptual threshold; the other conditions showed no effect. The results provide no support for the Strauss approach to psychopathology and education and little support for the Gellner and Zaporozhets theories. (68 refs.) - *K. H. Vogt.*

1142 FOWLER, WILLIAM. The effect of early stimulation: The problem of focus in developmental stimulation. *Merrill-Palmer Quarterly*, 15(2):157-170, 1969.

The factors which facilitate developmental learning of high general ability (earliness, intensity, persistence, regularity, family concentration, tutorial approach, and the presence of dominant family intellectual-cultural value orientations) apply equally to the developmental learning of specialized abilities. Superior, specialized abilities are reinforced by the presence of a culture which is generally stimulating in the given field, by the propensity of parents to label interest as talent, and by physical environmental conditions which produce differential competence in space perception. In the areas in which focused cognitive ability most often occurs (music, mathematics, graphic art, mechanical abilities, and athletic abilities),

it appears that concepts and abstract cognitive processes may be intrinsic to or embedded in the particular symbol systems from which they emerge, so that the range of the concept of general intelligence would be limited. Some concentration of developmental stimulation may be desirable, and focused stimulation should begin in very early childhood. (62 refs.) - *M. G. Conant.*

Ontario Institute for Studies in Education
Toronto 5, Ontario, Canada

1143 SCHAEFER, EARL S. Intellectual stimulation of culturally deprived infants. *Alabama Mental Health*, 20(4):1-2, 1969.

Verbal stimulation of lower socioeconomic status Negro infants was studied in Negro experimental (N=31) and control (N=33) groups meeting the criteria of family income under $5,000, mother's educational experience less than 12 years, and unskilled or semi-skilled occupation of mothers. Families not meeting 2 of the 3 criteria were eliminated. The Ss were selected from voluntary participants as a result of door to door surveys from 2 separate lower socioeconomic neighborhoods in Washington, D. C. Intelligence tests (the Bayley Infant Mental Test and the Stanford-Binet Intelligence Test) were given at ages 12, 21, 27, and 36 months and ratings were completed on test behavior. Tutors for the experimental group spent one hour daily with each infant for 5 days a week at 15 months of age and continued through 36 months of age. Tutorial programs emphasized varied experiences, good relationships, and verbal stimulation. The results showed that mean scores for both groups were above norms on the 14-month test which consisted of many sensory-motor items. On the 21-month test, both groups were below norms with a 7-point differential in favor of the experimental group. On the 36-month test, there was a 17-point difference. There was a large discrepancy in the distribution of IQ scores for the 2 groups. There were also significant differences between groups on the Johns Hopkins Perceptual Test, Peabody Picture Vocabulary Test, and on ratings of task-oriented behavior. Intellectual stimulation as defined in this study did produce higher scores on intelligence tests for the experimental group. (No refs.) - *B. Bradley.*

No address

1144 BABSON, S. GORHAM; & KANGAS, JOHN. Preschool intelligence of undersized term infants. *American Journal of Diseases of Children*, 117(5):553-557, 1969.

Forty-three term infants (38-wks gestation) who were undersized at birth (2,000 to 2,700 gm) and without evidence of fetal infection or congenital malformations were not different intellectually (Stanford-Binet Intelligence Test) from larger infants of comparable maturity when tested at about 4 years of age. There was an increased rate of head growth but not of length or weight in the smaller group during the 4-year follow-up. Mothers of the undersized infants weighed significantly less, smoked more cigarettes, and had more other small babies than did mothers of normal-sized infants. Although their physical growth pattern was suggestive of intrauterine malnutrition, there was apparently no intellectual deficit in this group of undersized infants. (15 refs.) - *E. L. Rowan.*

University of Oregon Medical School
Portland, Oregon 97201

1145 LIS, STANISLAWA. Visuo-motor development and its disturbances in a sample of prematures born with the weight below 1,250 grams. *Slow Learning Child*, 16(2):73-84, 1969.

Sixty-three percent of the premature infants with birth-weight <1,250 gm had retarded visuo-motor development in the 12-72 month range when examined at the age of 3-12 years. Among 73 prematures examined with the Bender-Gestalt test, 11 children were untestable because of their age or severe mental retardation. Visual defects, such as myopia, hypermetropia, and strabismus, were not significantly related to the retardation of visuo-motor development except for a case of fibroplasia retrolentalis where delayed development was found. Motor ability of these children was not impaired, except in the prematures with gross neurological damages. Visuo-motor retardation was associated with brain damage (44 children) and IQ (Wechsler Intelligence Scale for Children). Seventy-one percent of the premature infants born after complicated pregnancies had visuo-motor disturbances; the percentage was also high (46%) among premature infants born after uncomplicated pregnancies. Special remedial training for these children in highly desirable. (25 refs.) - *L. S. Ho.*

Medical School
Warsaw, Poland

1146 CHURCHILL, JOHN A.; BERENDES, HEINZ W.; & NEMORE, JEAN. Neuropsychological deficits in children of diabetic mothers: A report from the Collaborative Study of Cerebral Palsy. *American Journal of Obstetrics and Gynecology*, 105(2):257-268, 1969.

Maternal diabetes accompanied by acetonuria adversely affected the neuropsychological development of infants as measured by the Bayley mental and motor scales at 8 months, the posturing rating scale at 12 months, and Binet IQ at 4 years. A total of 237 infants of diabetic mothers were matched with nondiabetic controls for hospital of birth, race, sex, socioeconomic index, birth order, and maternal age. The mean IQ of children of diabetic mothers with acetonuria was 93 compared to 102 of the controls, whereas the mean IQ of children of diabetic mothers without acetonuria was not different from that of the controls. The effect of acetonuria was observed in both mild and severe diabetic groups. Maternal insulin administration and duration of pregnancy did not influence the IQ of the offspring of diabetic mothers. (55 refs.) - *L. S. Ho.*

National Institute of Neurological Diseases and Blindness
Bethesda, Maryland

1147 SCHALOCK, ROBERT L. Induced phenylketonuria (PKU): Lack of a critical period in development. *Psychonomic Science*, 17(3):191-192, 1969.

The development of learning deficiencies in phenylketonuric (induced) rats was not a function of a suggested critical period during which an organism's learning ability might be most sensitive to effects of excess L-phenylalanine (L-ph). Slower integration and responding of L-phenylalanine Ss, however, may have resulted from either the age of initial treatment or the duration of treatment. Six groups (N=6) of neonatal rats received one of 6 L-ph or saline conditions for 30 days. All Ss were tested beginning at 50 days of age on the Maier reasoning test and on a 12-second DLR (differential reinforcement of low rate of responding) operant schedule. An analysis of variance showed significant differences in reasoning scores among all 6 groups but not among the 5 L-phenylalanine groups. The 6 groups did not differ significantly in the 6 stages of the DRL schedule. Other than the inferred reasoning deficit on complex learning measures, there is little evidence to explain the performance of L-phenylalanine Ss; however, the results were confounded by interactive effects of age, dosage, and duration. (11 refs.) *D. F. McGrevy.*

Hastings College
Hastings, Nebraska 68901

1148 ERTL, JOHN P.; & SCHAFER, EDWARD W. P. Brain response correlates of psychometric intelligence. *Nature*, 223(5204):421-422, 1969.

The hypothesis that the average evoked potential (AEP) recorded from the human scalp reflects information processing by the brain was supported in a test where highly significant inverse correlations between IQ scores and latencies of visual AEP waveforms were obtained. Waveforms of high- and low-IQ Ss were characteristically distinct from each other. IQ scores for 573 primary school pupils in grades 2-5, 7 and 8, were obtained from the Wechsler Intelligence Scale for Children (WISC), the Primary Mental Abilities Test (PMA), and the Otis Quick Scoring Mental Ability Test. Ss were exposed to bright photic stimuli of microsecond duration in a darkened shielded room while fixating on a spot on a reflecting screen. Visual AEP was extracted from EEG data recorded from bipolar scalp contact electrodes with ground to the right earlobe. Latencies of the first 4 sequential AEP components obtained from zero-crossing analysis and amplitude summation of 400 responses to the photic stimuli were intercorrelated with IQ scores. Highly significant inverse correlations between latencies of sequential visual AEP components and IQ scores suggest the existence of some common factor. IQ scores correlated higher with late components than with early components. AEPs of high-IQ Ss were differentiated from those of low IQ Ss by high frequency components in the first 100 μsec and a lower mean latency on the third sequential peak. (10 refs.) - *D. F. McGrevy.*

University of Ottawa
Ottawa, Ontario, Canada

1149 SOLKOFF, NORMAN; YAFFE, SUMNER; WEINTRAUB, DAVID; & BLASE, BARBARA. Effects of handling on the subsequent developments of premature infants. *Developmental Psychology*, 1(6):765-768, 1969.

The immediate and subsequent effects of handling on the behavioral and physical

development of 10 white, premature infants were examined. Ss in the experimental group were 4 boys and one girl with a mean birth-weight of 3 pounds; the 4 boys and one girl in the control group had a mean birth-weight of 3.02 pounds. The controls received the routine care for premature infants--handling at 3-hour feeding intervals and at diaper change. Aside from the usual environmental stimuli in the nursery, the control Ss experienced no additional stimulation for 10 days. The experimental group, in addition to receiving customary nursery care, was handled 5 minutes/hour, 24 hours/day for 10 days. The Ss' necks, backs, and arms were gently rubbed. Data from the study indicated that differences do appear between handled and nonhandled prematures in both activity level and speed with which initial birth-weight is regained. The handled infants were more active and regained their initial birth-weights faster than did the control group, although by the time the Ss were 6 weeks old, the initial advantage of the experimental group was lost. Follow-up 7 months later indicated that the handled infants generally fared better than the nonhandled group. (20 refs.) - *C. L. Pranitch.*

State University of New York
Buffalo, New York 14214

1150 GARDNER, JAMES M.; SELINGER, STANLEY; WATSON, LUKE S.; SAPOSNEK, DONALD T.; & GARDNER, GRACE M. Research on learning with the mentally retarded: A comprehensive bibliography. *Mental Retardation Abstracts*, 7(3):417-453, 1970.

A bibliography of approximately 900 items on learning processes of the MR is presented. The literature covered is from the early part of the twentieth century through 1968 and includes research reports, theoretical studies, and papers presented at professional meetings which were subsequently published. All the articles cited are of human subjects. (889 refs.) - *M. D. Nutt.*

Orient State Institute
Orient, Ohio 43146

1151 HEAL, LAIRD W. *Abstracts of Studies in Laboratory Learning in Mental Defectives.* Nashville, Tennessee, IMRID (Institute on Mental Retardation and Intellectual Development) Papers and Reports, Volume 5, Number 2, 1968, 20 p.

Reports on studies conducted on learning by MRs under laboratory conditions (during the period 1964-1969) are presented in abstract form. The reports cover discrimination learning, reversal and non-reversal shift learning, overtraining, novelty in learning, and other aspects of learning behavior. (34 refs.) - *M. D. Nutt.*

1152 STEDMAN, DONALD J.; & OLLEY, J. GREGORY. *Bibliography of the World's Clinical Research Literature on Down's Syndrome: Behavioral, Social, and Educational Studies Through 1968.* Nashville, Tennessee, IMRID (Institute on Mental Retardation and Intellectual Development) Papers and Reports, Volume 6, Number 2, 1969, 57 p.

The renewal of interest in children with Down's syndrome and their increased visibility in modern society has led to an increased demand for information concerning past and current knowledge about this disorder. This bibliography covers the literature dealing with mongolism from 1950 to 1968. It is arranged both by authors and chronologically by year of publication. (414 refs.) *M. D. Nutt.*

DEVELOPMENTAL ASPECTS--SOCIAL

1153 GOSLIN, DAVID A., ed. *Handbook of Socialization Theory and Research.* Chicago, Illinois, Rand McNally, 1969, 1182 p.

Divergent theoretical perspectives at significantly different levels of analysis represent sociological, anthropological, and psychological approaches to the social-learning process. Among the issues considered are: mechanisms which cause a stimulus-response link to occur; conscious and unconscious learning; the role of interactional and cultural factors in learning; and those factors

which affect the maintenance and regulation of appropriate behavior patterns. Theoretical considerations include examinations of animal research, the effects of environmental stimulation and social experience on child behavior and social learning in early development, the theory of identification processes, internalization concepts, and cognitive, cognitive-developmental, psychoanalytic, cultural, and interpersonal theories. Socialization processes at different stages of development are reviewed, and the content of socialization is considered in terms of language, cognitive style, early sex-role development, psychosexual development, and development of interpersonal competence. The effects of special situations and conditions, such as physical disability, MR, residency in a correctional institution, and minority membership, are examined. This book would be of interest to psychologists, sociologists, social workers, pediatricians, anthropologists, and psychiatrists. (2,228 refs.)
J. K. Wyatt.

CONTENTS: Theoretical Approaches to the Socialization Process; Content of Socialization; Stages of Socialization; Special Contexts of Socialization.

1154 ZIGLER, EDWARD F.; & HARTER, SUSAN. The socialization of the mentally retarded. In: Goslin, David A., ed. *Handbook of Socialization Theory and Research*. Chicago, Illinois, Rand McNally, 1969, Chapter 28, p. 1065-1102.

If MRs are provided with experiences which optimize their potential for social behavior, the majority can maintain themselves at a socially acceptable level. Social competences should not be defined in simplistic terms but should be determined by a variety of continua theoretically based on the cognitive demands of the social requirements involved. Follow-up studies of MR adjustment present compelling evidence for the general role of personality factors in the performance of MRs; however, these factors have not been precisely defined, their relative importance has not been identified, and specific socialization histories which give rise to them have not been specified. Studies of occupational and social adjustment have not found a simple and striking relationship between social competence and intelligence in MRs within the 50 to 75 IQ range. Social competence in this group appears to be more influenced by personality and motivational factors than by intellective factors. The evaluation of socialization of more severely retarded individuals (IQ range: 0-40) requires different criteria and expectations than the evaluation of mildly or moderately retarded individuals. Successful job socialization has been related to initiative, self-confidence, cooperation, cheerfulness, social mixing with other employees, respect for supervisor, and efficiency in and understanding of work. Poor social adjustment has been associated with anxiety, jealousy, overdependency, poor self-evaluation, hostility, hyperactivity, emotionality, resistance, and failure to follow orders. Socialization programs for MRs should aim at optimizing socialization rather than at attempting to transform MRs into individuals with average or superior intellects. (140 refs.)
J. K. Wyatt.

1155 BLOUNT, WILLIAM R. A comment on language, socialization, acceptance, and the retarded. *Mental Retardation/MR*, 7(3): 33-35, 1969.

A case is made for the importance of adequate language and communication skills in the social acceptance of the retarded. The hypothesis is put forth that a positive correlation should exist between language ability and degree of acceptance and a re-examination of the acceptance studies is offered in the light of this hypothesis. It is evident that this relationship has not been explored to any great extent and its exploration is a pressing need. (33 refs.) - *Journal abstract.*

University of South Florida
Tampa, Florida 33620

1156 NORTON, FRANCES J. Oversocialization in the young culturally deprived child. *Exceptional Children*, 36(3):149-155, 1969.

Ninety-nine culturally deprived children (CAs 4.5 to 6.9 yrs) were studied to determine the relation of CA to social maturity and the relationship of social maturity to mental ability. Data on the children, all enrolled in the Head Start program, were obtained from the Vineland Social Maturity Scale, Draw-a-Man Test, observation, and interviews with parents and teachers. Social maturity was determined by calculating the deviation of social age (SA) from CA; this permitted comparisons of social maturity with CA and mental ability. The social maturity mean deviation was small; Ss averaged 0.2 years socially in advance of their CA. Although small, the mean deviation may have special

relevance since the group was overloaded with low ability children who predictably should have had below average SAs. The group mean IQ score from the Draw-A-Man test was 90 compared with a mean score of 100 for the general population. Correlation between mental ability and social maturity was .27; however, there was a sizable group for which these 2 factors were not positively related. Five children scored 3 standard deviations (SD) below the mean on IQ; only 2 were 3 SDs below the mean for SA. While 15 Ss scored 2 SDs below the mean on IQ, only 4 were 2 SDs below the mean for SA. At 2 SDs above the mean were 3 IQ scores and 6 SA scores. The trend of the scores is in the direction of oversocialization. Of 48 Ss with IQs below 90, 54% had SAs equal to or above their CA. Since these children had not been previously enrolled in school, their SA must reflect their experiences at home. Many of these disadvantaged children apparently must learn to cope with self care, communication, and cooperation with others at a level beyond their understanding. (7 refs.)
C. L. Pranitch.

Guilford College
Greensboro, North Carolina

1157 KELDGORD, ROBERT E. Brain damage and delinquency: A question and a challenge. *Academic Therapy Quarterly*, 4(2):93-99, 1968-1969.

Although only a limited amount of data is available, many juvenile delinquents appear to have minimal brain damage; unfortunately, many of these children go undetected and untreated. Policemen and social workers should take course work to become familiar with this problem and to learn to differentiate between the brain-damaged and the non-brain-damaged offender. It is most important to keep a brain-damaged child in school since a correlation of 90% is known to occur between delinquency and school dropout. When brain-damaged children have been held by the police, parents report that the children have been withdrawn from medication, they have been detained for excessive periods of time, and psychological workups have been ignored. If the juvenile population is considered comparable to that in society, 20% of those classified as delinquent are brain-damaged. The only solution to the problem is concentrated education for juvenile authorities. (14 refs.) - *V. G. Votano.*

Bay Area Social Planning Council
Oakland, California

1158 SHAVRICK, AVRUM S. Typical fears of atypical children. *Journal for Special Educators of the Mentally Retarded*, 4(1):10-12, 1969.

Basic fears which can produce other anxieties in children include those related to loss of love, anxieties concerning bodily harm, and fears of conscience. Fears of loss of love stem from anxiety about food, separation from parents, new surroundings, or feelings of inability to please parents. Anxiety related to the body originates from parental rebukes when the child investigates his body or when some incident makes him afraid of growing up. Conscience fears develop if the child is forced to be different from his friends, if he feels hostile to his parents, or if censure from the parent occurs. A study comparing fears of children of higher than average IQs with MR (CA 8 yrs 18 mos to 13 yrs 1 mo; IQ 54-75) children indicated that above average children feared animals (19.0%), imaginary creatures (4.8%), being alone (14.3%), and bodily harm (61.9%). MRs feared dog bite (40.0%), ghosts (32.8%), darkness (25.7%), being alone (17.1%), and fire (12.8%). (6 refs.) - *V. G. Votano.*

Rosewood State Hospital
Owings Mills, Maryland 21117

1159 MOROZOVA, N. G. Zadachi i metody izucheniya nravstvennykh kachestv lichnosti anomal'nogo rebenka (Problems and methods of studying the moral quality of an anomalous child's personality). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metodi Izucheniya Anomal'nikh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 37-44.

It is necessary to understand the motives behind the conduct of an anomalous child if we are to determine correctly the development of his moral character. The child's behavior must be studied in the family and in preschool and school institutions. Methods used include the analysis of all information gathered from all sources about the child as well as lengthy and systematic observations. Examples are given of questions directed toward the child himself. (22 refs.) - *R. K. Butler.*

1160 HOEJENBOS, E. Psychotic traits in mental deficiency. In: *Concilium Paedopsychiatricum*. Proceedings of the 3rd European Congress of Pedopsychiatry, held Wiesbaden, West Germany, May 4-9, 1967. Basel, Switzerland, Karger AG, 1968, p. 393-398.

In some cases, the behavior of SMRs may not be psychotic, but the normal manner in which the MR, undeveloped mind reacts with reality at a certain stage of development. The nonspecific numerical categorizations of childhood psychoses reflect how little child psychiatrists know about normal and abnormal behavior in severe and very severe MR. After a year of acclimation, a child psychiatrist can learn about mental deficiency in a good institution for the MR. A boy, 13 years old when institutionalized, became relaxed, answered questions more adequately, and his stereotyped manners diminished when he was in a "hidden place". The retraction (not present or non-personal eye contact, pre-occupation with strange mannerisms or with compulsive behavior, anxiety, or tension) of a SMR girl was diminished by giving her a simple, non-threatening surrounding. To determine if some change in surroundings will diminish the disturbances of an MR, it is necessary to find out the background of the behavior and communicate with the child in his own way. (13 refs.) - *D. F. McGrevy*.

1161 BOLLEA, G. The oligophrenic and the psychotic structure of the personality. In: *Concilium Paedopsychiatricum*. Proceedings of the 3rd European Congress of Pedopsychiatry, held Wiesbaden, West Germany, May 4-9, 1967. Basel, Switzerland, Karger AG, 1968, p. 399-409.

A structuralistic approach and analysis of a hypothetical continuum between oligophrenic and psychotic personalities provide an adequate dynamic developmental explanation which is also a guide for the therapeutic approach. The assertion that oligophrenic and psychotic structures are polar opposites with mixed cases between is derived from about 60 cases in which a disorder was evident before age 4 or 5 (20 cases each of mild oligophrenia, psychosis, and mixed). Confusion of the symptoms of object-relation and MR exists across authors and theoretical orientations in the new nosology. Normal and pathological manifestations of a given personality can be discussed as functional states of a biophysiological structure (Gestalt) in dialectical relation to the environment at a given developmental stage. The 2 structures correspond to 2 states of understanding and communicating with external reality. Diminished activity (or formation) in reverberating neural circuits can explain initial sensory motor retardation which can mean the S distorts his relations with the surrounding world. Distortion and retardation mean difficulty of communication; MR, then, appears to be an initial failure of communication. Instead of the high correlation in the normal child between motor-sensorial development, evolution of sensory-motor intelligence, evolution of the notion of object, time, and causality, and objectual relations, an alteration in all these patterns is always found. The 2 pathological structures differ in the phasing between one and any other of the normal patterns of development. (No refs.) - *D. F. McGrevy*.

1162 STUTTE, H. Die dementia infantilis (Heller) aus katamnestischer Sicht (Dementia infantilis [Heller] from a catamnestic point of view). *Acta Paedopsychiatrica* 36(11):317-326, 1969.

This is an amplification of the report on the divergent conceptions concerning the nosologic position of dementia infantilis, which are presented in the literature. It is founded upon clinical and partly catamnestic data from the investigation of 6 patients with the afore-mentioned syndrome. The author holds the view that this dementia, developing between the third and fifth year of life, has probably a polygenetic origin, that characteristic features of cerebral and psychical maturation give these pictures a typical age-bound profile, and that there do exist--in addition to secondary (encephalitic or encephalopathic) cases--rare "autochthonous forms", the genesis of which is still unknown. It is supposed that in these cases a metabolic disturbance affects physical and cerebral development. With reference to a 13-year-follow-up study of a case of his own and 2 other follow-up studies, the author comes to the conclusion that constancy and resistance to therapy of demential processes which come to manifestation within 6 to 9 months, is a peculiarity of Heller's disease compared with other (metabolic, epileptic, traumatic) demential processes of the same age period. The latter have a progressive character or may even improve. (11 refs.) *Journal summary*.

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1163 JOHNSON, RONALD C. Behavioral characteristics of phenylketonurics and matched controls. *American Journal of Mental Deficiency*, 74(1):17-19, 1969.

A group of 202 phenylketonurics (PKU) differed significantly from a control group (N=8,900) on 10 rated behaviors which are indicative of activity and aggressiveness. The Ss were rated by ward attendants on 22 behaviors (14 activity/aggressiveness behaviors and 8 sexuality/psychotic behaviors). Behaviors exhibited more frequently by the PKU Ss than by control Ss matched for ability level are hyperactivity, self-destructiveness, destroying ward property, running and pacing, attacking residents, and requiring restraint at the .01 significance level and destroying clothing, upsetting furniture, breaking windows, and banging doors when secluded at the .05 significance level (critical ratios). (9 refs.) - *A. Huffer.*

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DEVELOPMENTAL ASPECTS--PSYCHODIAGNOSTICS

1164 KILBEY, M. MARLYNE. A classical conditioning model for the assessment of intellectual deficits in young animals. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 21, p. 326-331.

Research on the animal analog conditions of phenylketonuria and cretinism in rats uses habituation and classical conditioning paradigms to de-emphasize the motivational and reward factors present in traditional operant techniques. Habituation and classical conditioning may offer a better evaluation of intellectual deficit and can be used with animals from the neonatal stage onward. Proposed studies which will investigate habituation during the neonatal period in rats (birth to 10 days) by repeatedly presenting tactile stimuli and measuring the general activity it evokes are not expected to find differences among normal, cretinoid, and "phenylketonuric" rats. However, it is hypothesized that differences in classical conditioning phenomena will be found among normal, cretinoid, and "phenylketonuric" rats ranging in age from birth to 30 days. An additional advantage of this research strategy lies in the fact that the anatomical and electrophysiological correlates of habituation and classical conditioning have already undergone intensive investigation. (11 refs.)
J. K. Wyatt.

1165 HAUSMAN, RALPH M. *Assessment of the Learning Potential of Exceptional Children*. Nashville, Tennessee, IMRID (Institute on Mental Retardation and Intellectual Development) Papers and Reports, Volume 6, Number 3. 1969, 16 p.

What is needed in IQ testing are techniques which will provide assessment of potential rather than purely diagnostic studies which can provide only a classification of mental ability. The paper is a discussion and critique of various techniques of IQ measurement. The diagnostic techniques associated with the Stanford-Binet, Wechsler Intelligence Scale for Children, and Bender-Gestalt tests are inadequate, especially when applied to MRs, since they are unable to evaluate the latent capabilities in the child. A predominantly verbal scale underestimates a child's potential to develop in other areas not dependent upon verbalizations. An alternate approach to more appropriate assessment of cognitive functioning is the formulation of 2 general factors, one culturally fair and the other based upon cultural experience. Cattell's work, reflecting both the neurological, integrative potential and cultural experience, is discussed. Leiter's International Performance Scale and the works of Kahn and Newland are also examined. The primary shortcoming of these models is the sampling approach. Mills' Learning Methods

Test and the Peabody Differential Learning Test indicate each student's general ability to profit from instruction in reading as well as his preferred learning modality. A further development of a comprehensive battery of tests based upon recent work in reading potential assessment with an inclusion of a much broader range of abilities is needed. (48 refs.) - *K. H. Vogt.*

1166 SHEPHERD, MARGARET JO. Assessment and placement. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education in the Residential Setting: Proceedings.* New York, New York, Columbis University, 1970, p. 77-92.

Educational programs must be derived from recognized individual differences so that the learner and the program are properly matched. The program must view the child's handicaps as well as his assets and strengths. Of the 4 assessments approaches discussed, the diagnostic-remedial techniques use intellectual evaluation and standardized achievement tests from which educational programs are devised based on learning characteristics. The objective is to maximize the individual's ability to achieve relative to his own potential. Behavior modification is based upon operant conditioning principles. It studies the relationship between events in the environment and the individual's response patterns. Effective reinforcers which elicit the desired behavior over a sustained time period are isolated. Task analytic assessment involves the selection of tasks to be learned, and the arrangement of the task components into a hierarchy. The individual is observed as to where on the hierarchy he is performing. Hence the starting point and the direction for instruction can be determined. Trial remediation emphasizes appropriate instructional procedures rather than assessing learner characteristics. A performance criterion is established and a learning program initiated. The procedure is retained if the criterion is obtained or discarded and new procedures instituted if not obtained. The significant feature of all 4 forms of assessment is the common emphasis on effective interaction between assessment and treatment, a necessary requirement for effective educational programing. (14 refs.) - *K. H. Vogt.*

No address

1167 STEISEL, IRA M. Some pitfalls in interpretation of the IQ. *Journal of Pediatrics*, 75(6, Part I):969-976, 1969.

Although an IQ score may be used to establish a child's functional level, to help formulate a plan of management, or to judge the effectiveness of a therapeutic regimen, it is essential to keep in mind that it is only a sample of the child's behavior--in a particular set of circumstances--compared to a normative group. An intelligence test may be influenced by variables in the person (sensory defects, culture, region, sex, experience, setting, sickness, and medication), differences among tests (skills required, mode of responding, reference group, and range of responses), and the mathematical properties of the test (unequal units, absent base line, retesting, or regression to the mean). An IQ score has meaning for an individual only in the context of medical examination and social history. Predictions of success in life on the basis of IQ estimation are generally invalid. (34 refs.)
E. L. Rowan.

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1168 BURLAND, R. The development of the verbal regulation of behaviour in cerebrally palsied (multiply handicapped) children. *Journal of Mental Subnormality*, 15(2):85-89, 1969.

If verbal regulation of behavior is a condition of intellectual development, then measuring its degree of development in multiply handicapped children should provide an index of educational potential. Such an assessment would make it possible to determine which CP child is going to make accelerated progress before that progress is actually realized. An assessment procedure suggested by Schubert which was used in research at the Spastics Society's residential school indicates there are 3 groups of severely MR CP children at different levels of verbal regulation of behavior. Different educational programs should be determined for each group since IQ is a function of the development of the verbal regulation of behavior and of the lower level and peripheral systems. (10 refs.)
C. L. Pranitch.

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1169 WATTS, C. A.; SITKEI, E. G.; & MEYERS, C. E. A methodological report on household psychometric screening for retardation. *Community Mental Health Journal*, 5(1):88-94, 1969.

Testing in the home as a phase of a community survey for MR probably results in fewer problems than transportation to a testing center and more actual good testing with good overall community acceptance. Two samples for testing were selected from completed questionnaires of 2,661 (91%) preselected households as a 10% stratified sample in the community. The group of 409 Ss tested included a random sample of those scoring in the lowest 10% on the socio-developmental scale completed by the initial interviewers and a random sample of all interviewed households. Examiners kept a carefully coded record of the use of their time. The 56 (13.2%) untested Ss were classified as moved, could not contact or illness, or refusal. No important socioeconomic characteristic was related to untested Ss. Consistent with the low refusal rate, generally helpful reception and accommodation were provided by the households. (2 refs.)
D. F. McGrevy.

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1170 California. State Education Department. *Spanish-Speaking Pupils Classified as Educable Mentally Retarded.* Chandler, John T.; & Plakos, John. Sacramento, California, 1969, 7 p. (Price unknown)

Forty-seven Mexican-American EMR children showed an IQ gain of about 12 points when tested in Spanish instead of English. The children spoke Spanish and had problems using English; they were enrolled in EMR classes in grades 3 through 8, and 30 were from an urban school and 17 from a rural school. The Spanish version of the Wechsler Intelligence Scale for Children was modified and administered in a relaxed atmosphere. As a result the mean IQ score was 13.15 points higher than the previous mean score (from 68.61 to 81.76), the median IQ score (previously 70) now was 83, and 27 students scored an IQ of 80 or over while 37 were 75 or over. There was a clear discrepancy between IQ tests administered in Spanish or English, and this adds to a basic distrust of IQ as the only intelligence measure. (No refs.)
M. Plessinger.

1171 HASKELL, SIMON H.; & ANDERSON, ELIZABETH M. *The Psychological Assessment of Young Cerebral-palsied and Brain-damaged Children in Uganda; Some Aspects of the Problems.* In: National Fund for Research into Crippling Diseases. *Action for the Crippled Child Monograph*, London, England, Vincent House, 1969, 20 p. $3.02.

Twenty CP and brain-injured Ugandan children (CA-2 1/2 to 9 yrs) from varied backgrounds were assessed on a battery of tests for selection to a school for physically handicapped children. Clinical observation obtained information about social and emotional adjustment. Four non-handicapped children were identically tested for comparisons. Nine tests (Koh's Blocks, Draw-a-Man, Goldstein-Scheerer, and Cattell) were selected because they were relatively culture free, largely non-verbal, and suitable for physically handicapped children. Responses to the tests were so poor that neither an IQ nor a DQ could be determined. Although a qualitative difference existed between the handicapped and non-handicapped groups, the non-handicapped were still well below the European mean. While brain-damage contributed greatly to poor responses, unfamiliarity with the testing situation itself did not markedly affect the results. Of the tests administered, the most useful were the Goldstein-Scheerer and the Cattell. Although responses were meager, the test findings did help in making comparisons within the group, in establishing the present level of functioning, and in recommending types of remedial programing. (9 refs.)
C. L. Pranitch.

1172 RAVENSBORG, MILTON R.; & WILLENSON, DAVID. Use of the NOSIE-30 behavioral rating scale in hospitals for the mentally ill and retarded. *Journal of Clinical Psychology*, 25(4):453-454, 1969.

Analysis of the validity of the NOSIE-30 rating scale of behavior of MR and mentally ill (MI) populations showed the instrument to be useful in discriminating hyperactive patients; however, behavioral variables were not differentiated for the MR and MI populations. The NOSIE-30 scale is comprised of 6 factors: Social Competence, Social Interest, Personal Neatness, Irritability, Manifest Psychosis, and Psychomotor Retardation. In addition, there is also a global Total Patient Assets score. Populations were obtained from one state mental hospital and one hospital for the MR. Nursing personnel did 2 independent ratings, and the results were compared by profile analysis of variance. Data showed

that the MI males had lower social interest scores than MI females. MR females had lower scores than MR males on neatness but were higher on irritability. In analysis of data for the MR of both sexes compared with MI of both sexes, the only differences were the low scores of MI males on social interest. Hyperactive patients of both populations differed significantly from non-hyperactive Ss. In these comparisons of various groups, the number of Ss was equal for comparison purposes on an individual basis but varied from category to category and ranged from 11 to 30 Ss. (4 refs.) - *B. Bradley.*

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1173 AMELANG, MANFRED; & ZIMMERMANN, KLAUS. Die Faktorenstruktur des HAWIK bei schwachbegabten Kindern (The factor structure of the HAWIK in MR children). *Heilpadagogische Forschung,* 1(3):381-389, 1968.

Some studies of MR Ss using the HAWIK (Hamburg-Wechsler intelligence test for children) showed that their intelligence profiles were less differentiated than those Ss with higher IQs; however, the present study (involving 233 Ss of lower mental ability) showed that this was true only in limited areas. One area in which caution should be used in evaluation is in verbal ability. A valid evaluation is possible in those areas requiring practical skills. (20 refs.) *S. L. Hamersley.*

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1174 FULTON, ROBERT T.; & LLOYD, LYLE L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test.* Baltimore, Maryland, Williams & Wilkins, 1969, 276 p. $12.75.

Although intricate and sophisticated assessment tools and instrumentation procedures which permit evaluation of middle-ear, cochlear, retrocochlear, and central deficiencies have been developed since 1945, equally sophisticated procedures for controlling client behavior and accurate response measurement are needed. Many MRs are difficult-to-test, and their assessment requires efficient, sensitive instrumentation and perceptive, precise evaluation of response behavior. Audiologists are aware of the diagnostic, treatment, and rehabilitation needs of MRs, and current concerns are with the development of improved audiological procedures which use advanced electronic instrumentation and human engineering principles. This review of diagnostic procedures contains data on standard pure-tone procedures, speech audiometry, differential procedures which use conventional methods with sophisticated instruments and specially trained audiologists, operant conditioning techniques, and the latest methods for using physiological measurements to obtain responses to auditory stimuli. This book would be of interest to speech and hearing specialists. (584 refs.) *J. K. Wyatt.*

CONTENTS: Pure-Tone Audiometry (Lloyd & Young); Speech Audiometry (Giolas); Bekesy Audiometry (Fulton); Differential Diagnosis of Auditory Impairments (Katz); Conditioning and Audiological Assessment (Spradlin, Locke, & Fulton); Acoustic Impedance Measurement (Lamb & Norris); Cortical-Evoked Response Audiometry (Price); Autonomic Responses as Supplementary Hearing Measures (Hogan).

1175 LLOYD, LYLE L.; & YOUNG, C. ELLERY. Pure-tone audiometry. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test.* Baltimore, Maryland, Williams and Wilkins, 1969, Chapter 1, p 1-31.

Basic audiological assessments are essential for MRs because they evidence a higher than normal incidence of hearing loss, a large percentage of which is related to otological pathologies and/or congenital anomalies. Minimum audiometric services should include pure-tone screening and a hearing conservation program with appropriate audiological and otological follow-up. Among the improved pure-tone methodologies which have resulted from problems encountered with MRs are electrodermal techniques, instrumental avoidance procedures, instrumental positive reinforcement techniques, ear-choice and modified ear-choice techniques, and play audiometry. The best methods for obtaining pure-tone data from MRs have employed simple, straight-forward pure-tone methods and a variety of reinforcers. Reliability and validity studies indicate that MRs probably do not present unique problems in bone-conduction audiometry. (138 refs.) - *J. K. Wyatt.*

1176 GIOLAS, THOMAS G. Speech audiometry. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 2, p 32-56.

Speech audiometry provides measures of speech-reception threshold and a speech discrimination score and plays an important role in the audiological assessment of MR children. The speech reception threshold serves as a corroborator of pure-tone thresholds and reduces the number of false-positive responses because the child must be able to hear a word to repeat it correctly. Speech discrimination assessment is complicated and requires a thorough evaluation of stimuli. Standard speech audiometry procedures can be modified slightly for individuals with poor speech production by using picture representations of standard words and a point-to-the picture procedure. Operant conditioning procedures may be used with special populations. Among the modifications of existing materials and administration procedures which may provide a more valid assessment of social handicap are the development of new speech messages, presentation methods, response requisites, and recording methods. (89 refs.) *J. K. Wyatt.*

1177 FULTON, ROBERT T. Bekesy audiometry. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 3, p. 57-96.

Bekesy audiometry provides rapid and successive measures of variability about the threshold and can be applied to a variety of populations. It provides general-type classifications and plays a significant role in the identification of cochlear and retrocochlear problems. Children and MRs present similar assessment problems, and successful assessment and reliability appear to be related to stimulus and response control rather than intelligence. MRs also exhibit assessment problems in the areas of attention, motivation, and/or underdeveloped motor, perceptual, and communication skills. When Bekesy techniques are used with MRs, variability around the threshold is greater and validity is less than with normal populations. MRs evidence a higher incidence of conductive impairments, some of which are related to congenital abnormalities, than normals. Data on cochlear, retrocochlear, and central auditory problems among the MR are needed to provide a complete audiometric evaluation and diagnosis. (91 refs.) - *J. K. Wyatt.*

1178 KATZ, JACK. Differential diagnosis of auditory impairments. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 4. p. 97-124.

To obtain meaningful results with MRs, the majority of auditory tests need to be modified. Standardized testing procedures can be altered by simplifying vocabulary and language, altering test procedures and manner of response, training the patient, and/or noting that test results are less definitive because of necessary modifications. Descriptive clinical auditory tests define degree of handicap, while diagnostic tests identify the location of a lesion. Research and clinical studies with MRs have emphasized descriptive testing and have been concerned primarily with the assessment of pure-tone conduction thresholds. Among the auditory techniques which are useful with MRs are the short-increment sensitivity index, alternate binaural loudness-balance, tone decay, Bekesy audiometry, staggered spondaic word test, and filtered multiple-choice picture test. The use of drugs to bring out the true pathological responses of an underlying lesion and to improve a patient's ability to cooperate during an evaluation needs to be investigated. There is a gross lack of knowledge on the psychoacoustic functioning of MRs, and steps should be taken to modify test batteries and employ presently available sophisticated psychoacoustic tests to obtain differential diagnostic data on auditory impairments in MRs. (82 refs.) - *J. K. Wyatt.*

1179 SPRADLIN, JOSEPH E.; LOCKE, BILL J.; & FULTON, ROBERT T. Conditioning and audiological assessment. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 5, p. 125-163.

Operant procedures were used to obtain stimulus control and threshold data on SMR children who were not testable with standard audiometric procedures. Operant audiometry based on positive-reinforcement discrimination procedures and a response reinforcement delivery box apparatus resulted in the establishment of stimulus control and reliable hearing thresholds with 6 SMR children (CA 8 yrs 8 mos to 16 yrs 10 mos; SQ 20-45). In a second experiment, a discriminated-escape avoidance procedure successfully established auditory stimulus control with 7 (CA 10 yrs to 17 yrs 4 mos; SQ 11-28) of 8 (CA 9 yrs; SQ

19) SMR males. The aversive stimulus was an electroshock (approximately 2.5 milliampere) delivered to the calf of the leg. Minimal and extensive training procedures were used, and there was a more rapid onset of avoidance behavior and greater stimulus control with the extended procedure. The conditioned-suppression effect and precise stimulus control were obtained with 4 SMR Ss (CA 112 to 147 mos; SQ 9-28) in a third experiment which used a combination of darkness and an intense noise as the unconditioned stimuli. Operant procedures may also be used with bone conduction tests involving masking and a short increment sensitivity index and to evaluate tone decay, loudness-balance, and tone control. Once stimulus control is established in an S, a battery of audiological tests could be administered, thus justifying the time required for conditioning. (26 refs.) *J. K. Wyatt.*

1180 LAMB, LLOYD E.; & NORRIS, THOMAS W. Acoustic impedance measurement. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 6, p. 164-209.

Acoustic measurements of absolute and relative impedance are examination techniques which may be clinically useful in the assessment of difficult-to-test individuals such as MRs. Absolute impedance measurements provide objective and quantitative data on the status of the middle-ear conductive mechanism. Mechanical and electroacoustic impedance bridges are the most expedient methods for measuring absolute impedance. Tympanometry is another form of absolute impedance measurement which provides discriminative diagnostic data for various conductive disorders. In relative impedance audiometry, changes in the acoustic impedance of the ear as a result of reflex contractions of the middle-ear muscles are measured with an electroacoustic-impedance bridge. Either acoustic or nonacoustic stimuli can be used to obtain measurements which provide data on the functioning of the cochlea and eighth nerve, brain stem, the seventh nerve, and the middle ear. Although absolute impedance procedures have not been employed with MRs, it may be assumed that MRs would attain the same clinical benefits from these techniques as normal populations. Relative impedance techniques have been successfully used with difficult-to-test patients. (55 refs.) - *J. K. Wyatt.*

1181 PRICE, LLOYD L. Cortical-evoked response audiometry. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 7, p. 210-237.

The late components of the auditory-evoked response seem to be control responses to sound stimulation and are often observable at or near the psychophysical threshold level of the stimulus. These cortical responses may be a valuable means of determining hearing thresholds in individuals who are either unwilling or unable to make a voluntary response to sound. Evoked-response audiometry uses either a predetermined schedule of stimulus frequencies and intensities which are interpreted when all series are completed or a threshold searching procedure which is evaluated following each series. The evoked response indicates that the central nervous system is changing as a result of stimulation; however, the threshold for the auditory-evoked response should not be regarded as equal to the psychophysical threshold. Common errors in evoked response interpretation which appear to be due to tester biases are false-positive responses and false-negative responses. These can be minimized by establishing strict response criteria, obtaining frequent reference series throughout the test, repeating all negative runs several times, or conditioning. Evoked response audiometry may be a useful tool with MRs; however, research has been meager and large scale studies of the response characteristics of MRs and the relationship between threshold for the evoked response and psychophysical thresholds are needed. (52 refs.) - *J. K. Wyatt.*

1182 HOGAN, DONALD D. Autonomic responses as supplementary hearing measures. In: Fulton, Robert T.; & Lloyd, Lyle L., eds. *Audiometry for the Retarded with Implications for the Difficult-to-Test*. Baltimore, Maryland, Williams & Wilkins, 1969, Chapter 8, p. 238-262.

Autonomic nervous system (ANS) responses are produced by involuntary mechanisms and do not depend on the capabilities of the person being examined; therefore, they are potentially useful methods for assessing the hearing of MRs. The "law of initial values" is a principle of ANS functioning which establishes an inverse functional relationship between prestimulus activity and response magnitude; maximal changes in the physiological variable

under consideration are related to the lowest level of prestimulus activity. The concept of "response stereotype" refers to individual tendencies to respond with the same pattern regardless of the type of stimulation. Several physiological variables should be monitored simultaneously to sensitize the recording method to between-subject variability in response patterning. The functional activities of the heart, sweat glands, eye, and lungs are potentially useful response vehicles of hearing. Experimental evidence supporting the value of ANS response measurement in hearing assessment should be obtained before this method is recommended for clinical use. (51 refs.) - *J. K. Wyatt.*

TREATMENT AND TRAINING ASPECTS--EDUCATIONAL

1183 YOUNIE, WILLIAM J.; & GOLDBERG, I. IGNACY, eds. *Special Education Administration in the Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, 167 p. (Price unknown).

MR institutions need to have an organization that permits them to interact freely with the outside environment so that they can fully utilize resources and efficiently adapt to change and, therefore, better serve their residents. A wide variety of papers is presented on how to eliminate in institutions much of the bureaucracy now in effect and to eliminate their isolation from the surrounding community. The type of material is primarily discussion and a general evaluation of some of the models being implemented. It was generally concluded that some progress is being made in expanding institution-community relations but that much more involvement and interaction is needed. Society must be educated to the fact that, by providing necessary resources in the form of qualified teachers, technical assistants, and funds for new buildings and equipment, they will obtain, in return, better adjusted and trained MRs who can take a productive role in society. Furthermore, administrators and staff must renounce any personal goals and substitute organizational goals beneficial to the welfare of the MRs. (73 refs.) - *K. H. Vogt.*

CONTENTS: The Role of a Residential Facility in Modern Society (Dentler); The Present Nature of Residential Populations (Dingman); Multidimensional Problems of Administration in a Residential Setting (Stevens); The Current Status of Education in Residential Centers in the United States (White); The Educational Roles of a Residential Center (Rosen); Assessment and Placement (Shepherd); Administrative Implications for Education at Various Ability Levels (Erdman); Resources for Implementing the Administrative Model (Roos); An Administrative Model for the Residential Setting: An Application of Open System Theory (Lewis).

1184 WHITE, WESLEY. The current status of education in residential centers in the United States. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in a Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 42-56.

The objective that must be pursued by the MR institution is maximum growth and development of each resident. Despite the fairly general acceptance of this concept, it is forced to exist in residential centers reflecting archaic modes of care. From 1880-1925, MRs were considered a menace to society and individuals from which communities must be protected; professional consensus on care was isolation by the most economical means. Since retardates were viewed as something less than human, they received care accordingly. As a result, they showed little or no improvement in their intellectual or physical development. Presently, it is understood that intelligence is not fixed but can be increased in an enriched environment. This concept, however, can not be properly implemented in institutions whose architectural design, equipment, and personnel attitudes reflect former eras. The ideal educational process would be to keep the MR child at home for as long as possible before transferring him to a community residential center where small groups of children

are treated as individuals, where interpersonal relationships between residents and attendants are fostered, and where individual growth, development, and welfare are stressed. (15 refs.) - *K. H. Vogt*.

1185 ROSEN, DAVID. The educational roles of a residential center. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in the Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 57-76.

Growth and development of a residential school program is dependent upon creating and maintaining public awareness and interest in the MR. The administration must develop all channels of communication between the institution and the community. Employees and parents must be made aware of the goals and limitations of residential care. Parents should become highly involved in the kinds of activities performed and their effect on the MRs. Visits by governmental officials, organizations, and clubs should be encouraged as well as publicizing special interest items thru the local news media. The tri-parted plan of treatment, training, and therapy is vital for intellectual, emotional, and physical development of MRs. The programs should begin early-diversified activities during formative years. Personnel involved in the education of MRs should meet the same rigid standards applicable to public education. Programs should be designed to meet the specific needs of the individuals, whether it be to prepare them for community living or adjustment to institutional living. (No refs.) *K. H. Vogt*.

1186 ERDMAN, ROBERT. Administrative implications for education at various ability levels. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in a Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 93-111.

Residential schools are beginning to realize that their function includes not only residential care but also training and education of all MRs. Hence, the education departments in institutions are being changed considerably to meet this new role. The Hospital Improvement Program (HIP) at the Utah State Training School has modified its program so that education has become an integral part of the total residential program. The objective is to examine the means by which more residents could complete the program and be returned to the community. Five boys and 5 girls and 2 sets of trainers become a family unit living together and sharing experiences. After an orientation or assessment period consisting of tests and observations, the children's future schedules are planned. The program may consist of one-half day of school with the remainder of the day spent in family activities. Classroom subjects may center around language development, music, physical education, and crafts. Later, the MRs may be programed into either pre-foster placement, prevocational training, or dormitory living. The challenge of the administration is how to convince the staff, parents, and public that changes in programing are necessary and beneficial. Future studies are necessary in order to formulate specific guidelines which will explain the dynamics of this process. (1 ref.) - *K. H. Vogt*.

1187 *Transfer or Transformation*? (Guide Lines for Teachers Number 7.) London, England, College of Special Education, 1969, 56 p. $0.90.

This one-day course, held at Manchester, England, considers the problems, implications, and consequences involved in the proposed transfer of the responsibility for the education of MR children in England and Wales to the Department of Education and Science. Education authorities will have to deal with the problem of increasing accommodations for MR children and will have to integrate and provide in-service training for personnel presently employed by the health authority. Among the problems involved in the education of the MR are: the gap between research findings and their practical application; the lag in research dissemination; communication problems among administrators, physicians, and teachers; the need for a re-emphasis of the formal approach to education; and the question of whether EMR and TMR children should receive the same type of education and be educated in the same classes. These papers include discussions of medical advances to reduce the number of MR in hospitals, operant conditioning techniques, early educational intervention programs, the importance of relating educational activities to a child's mental age, the problems involved in integrating the education of EMR and TMR children, and teacher training needs. (22 refs.) *J. K. Wyatt*.

CONTENTS: The Social and Educational Implications of Recent Research (Clarke); An Experiment in Co-operation (Nicholls); Transfer

or Transformation? (Segal); Past, Present, and Future Developments in the Training of Teachers of the Mentally Handicapped (Stevens); The Future of Schools in Hospitals for the Subnormal (Mittler); and Summing Up (O'Connor).

1188 CLARKE, A. D. B. The social and educational implications of recent research. In: *Transfer or Transformation?* (Guide Lines for Teachers Number 7.) London, England, College of Special Education, 1969, Chapter 1, p. 7-19.

Since knowledge concerning the prevention and amelioration of handicaps in relation to MR is limited, an active experimental approach to education and social development is needed. The degree of most handicaps can at least be altered and, in many cases, can be greatly modified. The decrease in the incidence of SMR since the 1920's appears to be due to improvements in social conditions, antenatal and natal care, maternal and child health services, and nutrition. Recent prevention trends include genetic counseling, early diagnosis, dietary treatment, examination of the amniotic fluid, and the investigation of the possibility of a relationship between infective hepatitis and mongolism. The prevention of mild MR depends largely on the improvement of social conditions and on breaking the link between irresponsible parenthood, poor social conditions, and deprived children. An important factor in the amelioration of MR is the knowledge that all behavioral processes can be changed and that MRs respond best to structured, individually taught experiences. Difficulties involved in the transfer of training responsibilities for the SMR to the Department of Education include the lack of trained staff and the lack of knowledge about SMR among teachers at training colleges. Mild MR is partially self-curing for some individuals. The curriculum for early intervention programs for mild MRs should be designed to meet the specific needs of slum children and should be reinforced and continued for a long period of time. (No refs.) - *J. K. Wyatt.*

1189 NICHOLLS, R. H. An experiment in co-operation. In: *Transfer or Transformation?* (Guide Lines for Teachers Number 7.) London, England, College of Special Education, 1969, Chapter 2, p. 20-24.

Experiences in a comprehensive educational experiment in 2 schools indicate that the educational methods required for EMR and TMR/SMR children are very similar, although their degree may differ and they must be planned for the individual child. Assessment is carried on in these schools as a part of a long-term teaching process which involves individual learning programs in the areas of perception, sensory-motor development, pre-reading, and numbers. Educational emphasis in the TMR/SMR school include housecraft, woodwork, pottery, animal husbandry, and rural science as well as most of the activities of a normal school. TMR/SMR children are admitted to school at 2 years of age and participate in a systematic program of structured play and educational activities. There is usually a marked difference between the progress of children admitted at an early age and that of those admitted later in life. (No refs.) - *J. K. Wyatt.*

1190 SEGAL, S. Transfer or transformation? In: *Transfer or Transformation?* (Guide Lines for Teachers Number 7.) London, England, College of Special Education, Chapter 3, p. 25-26.

The proposed transfer of responsibility for the education of MRs in England and Wales from the Health to the Education Service should be carried out as quickly as possible in a manner which will offer the greatest hope for the handicapped and attract able students from a range of disciplines. Announcement of the impending transfer has relieved parents of MRs who have feared that exclusion from the educational system meant that their children would be unable to receive any educational benefits. The transfer reflects a wider conceptualization of the nature and purpose of education in that it defines education as anything which in any way enhances the functioning of a child as a human being. The transfer may require a rethinking of the objectives of teacher training. (No refs.) - *J. K. Wyatt.*

1191 MITTLER, P. The future of schools in hospitals for the subnormal. In: *Transfer or Transformation?* (Guide Lines for Teachers Number 7.) London, England, College of Special Education, 1969, Chapter 5, p. 43-53.

Among the difficulties which educational authorities will have to face when they assume responsibility for the education of MRs in England and Wales are the provision of education for ward-bound hospitalized children, the wide range in the quality of

subnormality schools and of their staffs, the isolation of hospital schools from the mainstream of education, and the question of whether or not MRs should be hospitalized. Hospital education for severely subnormal children could be provided by specially trained nursery nurses who would be directed by a headmaster and would organize play and educational activities for the ward as well as for individual children. Since the proportion of staff without qualified training is far higher among hospital schools than among junior training centers, staff training for hospital schools will need to be a major focus of the Department of Education and Science. Hospital schools will require the services of a variety of educational specialists, and they should extend their services to every child in the hospital by providing ward or "home" teaching. Hospital schools should be linked to and cooperate with outside schools and should develop a close relationship with the community. Since epidemiological studies suggest that MRs could be adequately cared for in the community, hospitalized children should be carefully reviewed to determine the most appropriate environment for the development of their personalities and abilities. Residential schools and hostels could provide alternatives to hospitalization or home care. (8 refs.) *J. K. Wyatt.*

1192 ROUQUES, DENISE. *Psychopedagogie des Debiles Profonds. (Psychopedagogy of the Profoundly Retarded).* Paris, France, Editions Fleurus, 1967, 620 p. (Price unknown)

The teaching methods used in a school for MR (IQ < 50) girls aged 6-14 years are described in detail. The school houses 30 girls, each of whom is assigned upon admission to a special teacher who also handles 4 other girls. The students spend the mornings with these teachers working on learning skills to help them cope with daily life; the afternoons are spent on improving motor skills and imaginative play. The emphasis is on helping the girls attain more autonomy in dealing with the demands of everyday life. So far, most of the students have been successful in learning these skills as well as learning to express and occupy themselves. At the age of 14, the students either enter a psychiatric hospital (if their MA is < 4-5 yrs), begin an apprenticeship in a sheltered workshop if they are able, or return to the care of their parents. Methods of communicating with parents and helping them to accept their child are described. (27 refs.) - *M. Conant.*

CONTENTS: The Learning Tasks; Education; Dialogue with the Parents; Teaching Methods; Achievement.

1193 MITTLER, PETER. Towards educational responsibility. *Teaching and Training,* 7(4):123-127, 1969.

The transfer of responsibility for the education of MR children from the Health to Education Services requires reorganization and planning to utilize new resources and facilities and to ensure that junior training centers become an integral part of the educational system. Planning tailor-made programs for the individual child, a new approach to initial and continuous assessment, visits by educational psychologists, and other advisors, more staff and helpers, smaller classes, and architecturally appropriate training centers to fill the needs of individual oriented teaching are goals for the junior training centers that, when met, will augment the special schools already in the educational system. Teachers must demand a more professional approach to the education of the MR children and the organizational changes for progressive special education. (2 refs.) *D. F. McGrevy.*

University of Manchester
Manchester, England

1194 STUTTE, HERMANN. Uber die Grenzen der Bildungsfaenigkeit (The limits of the capacity to be trained). *Acta Paedopsychiatrica,* 36(3/4):73-75, 1969. (Editorial)

The 10th anniversary of the German Society of Parents and Friends of Psychically Handicapped Children (Lebenshilfe, Assistance in Life) gave an opportunity to assess the results of the society's activities. The conclusion was that the possibilities to stimulate the MR are greater than has been assumed before (mainly in motor and practical development). The cooperation of the child psychiatrists in this field appears to be a legitimate and central task of pedopsychiatry. (No refs.) - *Journal summary.*

Hans-Sachs-Strasse 6
D-355 Marburg/Lahn, West Germany

1195 DREYER, MANFRED. Das geistig behinderte Kind und der Bildungsbegriff in den Schulgesetzen (The mentally retarded child and the laws relating to the concept of education in school). *Praxis der Kinderpsychologie und Kinderpsychiatrie*, 18(2):71-74, 1969.

In the education of the MR, no absolute lower limits should be set in excluding children from school attendance; rather, attempts should be made to encourage progress in areas where residual abilities remain. There is a question in Germany whether a child's constitutional rights are being violated if he is excluded from schooling and training because of severe MR. In this light, it would be wise to reformulate the concept of education to include those aspects of a purely practical nature, so that all children, no matter how severe their disabilities, may receive some education. (No refs) - *S. L. Hamersley.*

Barenholzweg 28
Coburg, West Germany D 863

1196 MacLEECH, BERT; SCHRADER, DONALD R.; & MacLEECH, PEARL MAZE, eds. *Eighth Annual Distinguished Lectures Series in Special Education and Rehabilitation: Summer Session 1969*. Los Angeles, California, University of Southern California Press, 1970, 126 p. $3.00.

Speeches by 6 special education educators and practitioners discuss international conferences and developments in special education, effectiveness of the current rehabilitation priorities, the university's role in larger social problems, the counselor's role in the institution in which he is employed, legislation in California, and minority value differences. The speeches are based on research and personal experience, and the issues raised should be of interest to a wide reading audience. (178 refs.) *M. Plessinger.*

CONTENTS: World-Wide Developments in Mental Retardation (Dybwad); Recent Research in Rehabilitation Counseling--Pertinent or Not? (Fisher); Coping with Tomorrow: Problems of Children and Youth (Leland); The Politics of Counseling (Stubbins); Legislative Developments and Perspectives in California (Taft); Value Confrontation and Rehabilitation of the Culturally Different (Wilson).

1197 BANDER, PETER, ed. *Looking Forward to the Seventies: A Blueprint for Education in the Next Decade*. Gerrards Cross, England, Colin Smythe, 1968, 333 p.

In this book, leading educators express their personal opinions on England's present educational practices, institutions, and policies. Suggestions for improving the educational system in the 1970's are also offered. A major problem in the 1970's is how to prevent the education colleges from assuming the features of a factory in an effort to produce enough teachers. Teachers will have to study and understand the total environment in which their students are growing up and accept the responsibility of guiding and shaping changes in curriculum and methods. The most economical and quickest means of offering teachers in-service training would be the utilization of the radio and TV media. Education needs weekly newspapers, independent of outside interests and run by journalism experts. Music appreciation and participation should continue beyond primary school to secondary school and should include opera. Art, which has been an activity peculiar to primary grades, should also be extended throughout all stages of education. Special education must include the family if handicapped children are to realize their greatest potential. Regionalization of special education is promising because it includes medical, social, parental, vocational, and educational services in one school building. (40 refs.) *C. L. Pranitch.*

CONTENTS: The 1944 Education Act in the Next Decade (Butler); Reversing the Engine (Robbins); Who are the Real Broadcast Teachers? (Adam); The Training of Teachers (Wingate); Looking Ahead in Education (Gould); The Public Schools (Chenevix-Trench); The Grammar Schools (James); Equality & Fraternity (Newsom); Revolution in Secondary Education (Donnison); The Transition from Primary to Secondary Education (Burrows); Condemned at Seven: Is Streaming Really Necessary? (Kemble); Primary Education (Blackie); The Community: The Tensions and Delinquencies of Youth (Parkinson); Youth Service (Herbert); Special Education for the Handicapped (Lumsden); Gifted Children (Branch); Educational Broadcasting (Postgate); Books and Newspapers (James); The Maintained Schools: Recovering the Initiative (Young); The Catholic Voluntary Schools (Beck); The Church of England Schools I: To Mature Manhood (Trillo); The Church of England Schools II. (Bliss); The Future of Jewish Schools (Conway); Reflections & Projections on Music & Youth (Mayer); Art Education (Read): The Shape of English Teaching (Henn).

1198 LUMSDEN, JAMES. Special education for the handicapped. In: Bander, Peter, ed. *Looking Forward to the Seventies: A Blueprint for Education in the Next Decade*. Gerrards Cross, England, Colin Smythe, 1968, p. 201-214.

The present system of special education in England could be improved in the areas of aid for parents, the dilemma between convenience and regional development, preparation of teachers, and special education in ordinary schools. The greatest problem of the 70's is to develop a means of including the family in special education. Educating the family is necessary if handicapped children are to develop with as few handicaps as possible. Highly specialized schools exist in very few places and children who attend them need to travel long distances. Some compromise should be made between specialized schools and their location, thus enabling the child to receive appropriate schooling a reasonable distance from home. Children with less severe handicaps should attend special classes in ordinary schools, or perhaps be suitably educated in a regular class. However, if a handicapped child is to be properly educated in an ordinary class, he must be specifically placed there, not left there. (5 refs.) - *C. L. Pranitch.*

1199 RETISH, PAUL M. Freedom of speech--Even for the mentally retarded. *Focus on Exceptional Children*, 1(6):8-9, 1969.

Since EMR adolescents need to verbalize their feelings regarding their physical and social development, a teacher who will listen sympathetically can influence their behavior. A classroom atmosphere should stimulate free talking with the teacher as a counselor. The school faculty must understand the aims of the program and be ready to serve as counsellors, friends, and surrogate parents. The goal of education is to make EMR self-sufficient in society, and to do this, the teacher must build rapport and student confidence. (No refs.) - *M. Plessinger.*

University of Iowa
Iowa City, Iowa 52240

1200 TYSON, KENNETH L. A model guide to the special classes. *Journal of Learning Disabilities*, 2(5):269-273, 1969.

A model philosophy of special education objectives (based on needs) and courses is given for primary, intermediate, and secondary students. The purpose of the philosophy is to facilitate understanding and acceptance of special education by school personnel, teachers, parents, and the children themselves. Social, recreational, occupational, and academic skills are integrated in this philosophy. (5 refs.) - *J. M. Gardner.*

Gettysburg Public Schools
Gettysburg, Pennsylvania 17325

1201 FUCHIGAMI, ROBERT. Emerging curricula for the elementary level educable mentally retarded. *Mental Retardation/MR*, 7(5): 37-40, 1969.

EMR curricula has lacked continuity and was borrowed from normal education rather than originating as a systematic development of specific skills and attitudes. Curriculum specialists must conduct a massive curriculum planning campaign. In the emerging new curricula, the major forces which are influencing their development and direction include regular education, compensatory education, prescriptive education, and special education. During the next decade, there will be a great amount of activity in the area of curriculum development for the EMR because of the creation of centers to research and demonstrate curriculum reform, the formation of curriculum development teams and the testing of their new curricula, the expression of interest in curriculum review and reform by federal agencies, the establishment of instructional materials centers which will disseminate curriculum innovations and the formation of partnerships (as is being done in regular education) between special education and commercial-industrial firms to develop instructional systems. Such activity makes feasible a national basic curriculum with regional and local supplements. (24 refs.) - *L. Kyle.*

Sonoma State College
Rohnert Park, California

1202 SHIF, K. I. Sistema izucheniya detei pri ikh napravlenii vo vspomogatel'nuyu shkolu (System of studying children during their selection for a remedial school). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 66-72.

Proper selection of children for special schools is one of the main problems in school

organization. The work of special committees in selecting students for remedial schools is discussed. Those children about whom there is scant data are seen and examined by these special committees after which selection is made. One useful technique is to place those students who will be assigned to remedial school the following year into a special class for one month at the end of the present school year. (9 refs.) - *R. K. Butler.*

Institute of Defectology
Moscow, Union of Soviet Socialist Republics

1203 ZABRAMNAYA, S. D. Nekotorye puti uluchsheniya sistemy otbora detei vo vspomogatel'noi shkoly (Some ways of improving the system of selecting children for remedial schools). In: D'yachkov, A. I.; Rozanov, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 73-76.

To avoid needless and errant selection of children for remedial schooling, the unsuccessful child should be studied in his school environment to see if his difficulties can be overcome in the regular school. If not, then a more thorough investigation should be made by studying groups of 8-10 Ss for a period of 5-6 days with 30-minute lessons and 15- to 20-minute recesses. The lessons should follow a prescribed program and allow the defectologist to determine precisely where the MR S should be placed. (No refs.) *R. K. Butler.*

V. I. Lenin State Educational Institute
Moscow, Union of Soviet Socialist Republics

1204 SMIRNOVA, A. N. Pedagogicheskoe izuchenie uchashchikhsya vspomogatel'noi shkoly (Teaching study of remedial school students). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 77-83.

The remedial schools teacher must observe the MR child in the home, in the classroom, and with his classmates. The most important meeting with the child is in the home before the school year starts. This visit gives the teacher the necessary contact with the child and his family so that he can correctly plan the first days of the school year for the student. Further visits to the home also ensure that the home environment will not suppress the child's development. Dictation by the MR and problems associated with it in the classroom are described. (2 refs.) *R. K. Butler.*

No address

1205 PINSKII, B. I. Izuchenie osobennostei lichnosti i deyatel'nosti uchashchikhsya vspomogatel'noi shkoly (Study of the peculiarities of the personality and the activity of remedial school students). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 84-87.

The understanding of the personality and activity of remedial school students is the key to giving them the best possible education. In order to accomplish this, each child must be studied individually; a study plan which will best suit the majority of the pupils in the class should then be selected. (5 refs.) *R. K. Butler.*

Institute of Defectology
Moscow, Union of Soviet Socialist Republics

1206 ASAFOVA, A. G. Ispol'zovanie katamnesticheskogo metoda v usloviyakh vspomogatel'noi shkoly (Use of the catamnestic method under remedial school conditions). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 93-96.

Catamnestic study of MR pupils who have finished remedial schools is an important method of checking the efficacy of the school program. After a thorough clinical analysis of graduates from a school in Moscow was made, the Ss were visited at home and interviews were held with the parents about the children's behavior and interests. Each S's psychic development was followed and information on his work capability, conduct, and participation in community life was collected from his coworkers. The catamnestic method can be used by psychoneurologists and educators-defectologists to improve corrective-remedial and medical work in remedial schools. (4 refs.) - *R. K. Butler.*

Institute of Defectology
Moscow, Union of Soviet Socialist Republics

1207 PEKELIS, E. YA. O metode pedagogicheskogo izucheniya nekotorykh form neuspevaemosti shkol'nikov (Methodology of an educational study of some forms of poor progress in students). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 96-103.

The teacher must study the child in all of his activities in order to formulate the proper remedial plan for him. The teacher may use games and conversations to relate to the child and use his capabilities to their fullest. Asthenic children were studied and their handicaps in pronunciation, spelling, and thought processes are discussed. (6 refs.) - *R. K. Butler.*

Institute of Defectology
Moscow, Union of Soviet Socialist Republics

1208 MANZHULA, I. N. Izuchenie uchashchikhsya vspomogatel'noi shkoly v protsesse trudovoi deyatel'nosti (Study of remedial school students during work activity). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1965, p. 105-109.

The value of knowing the work habits of MR Ss is important for the selection and organization of vocational education. MR Ss from 6 Ukrainian remedial schools (grades 5 through 8) were given the problem of preparing a frame for a picture; however, they were not told how to do it. For these Ss, the use of a photograph was the most frequently used method to determine the length of the sides (84% in grade 5, 72% in grade 6, 54% in grade 7, and 43% in grade 8). A ruler was used by 9% in grade 5, 16% in grade 6, 21% in grade 7, and 24% in grade 8. Only a few Ss measured the number of units on the picture with measuring instruments and then transposed them to the material from which the frame was to be made (7% in grade 5, 5% in grade 6, 9% in grade 7, and 24% in grade 8). The different methods used by the Ss revealed that they used different types of mental activity. The use of this technique enables the teacher to judge how a child relates to work, what forms of work to emphasize, what attracts the child to work, and the characteristics of his personality. This type of study should be used more extensively in remedial schools. (No refs.) - *R. K. Butler.*

Ukrainian Institute of Psychology
Kiev, Union of Soviet Socialist Republics

1209 MIRSKII, S. L. Kachestvennaya otsenka trudovykh navykov uchashchikhsya vspomogatel'nykh shkol (Qualitative evaluation of remedial school students' work habits). In: D'yachkov, A. I.; Rozanova, T. V.; & Yashkova, N. V. *Metody Izucheniya Anomal'nykh Detei (Methods of Studying Anomalous Children)*. Moscow, Union of Soviet Socialist Republic, Prosveshchenie Press, 1965, p. 110-114.

Evaluating work habits of remedial school students plays an urgent and important role in creating vocational education programs. Students were given 15 rectangles (1 perfect) and told to correct them by tracing the incorrect rectangle on paper and using an unlined ruler to draw the correcting lines. The level of perfection of the habits of regular and remedial school vocational students can be objectively compared by using the indices developed for evaluating student performance on the rectangles test. (No refs.) - *R. K. Butler.*

Institute of Defectology
Moscow, Union of Soviet Socialist Republics

1210 GUSEVA, G. M. K voprosu o podgotovke umstvenno otstalykh detei k postupleniyu v shkolu (Preparation of mentally retarded children to enroll in school). In: D'yachkov, A. I. *Materialy Nauchnoi Konferentsii po Defektologii (Materials of a Scientific Conference on Defectology)*. Moscow, Union of Soviet Socialist Republics, RSFSR Academy of Educational Sciences Press, 1962, p. 63-68.

The EMR should be exposed to a classroom atmosphere before he enters a remedial school. Those Ss who are referred from public schools are already acquainted with the routine to be followed while unprepared students have a 30 to 50% dropout rate during the first year of study. While normal 6- to 7-year-olds develop an interest for knowledge, 8- to 9-year-old MR Ss lack this interest. This indifference on the part of some students can be linked to their lack of scholarly experience. The kindergarten should be responsible for preparing the MR for school. Remedial schools

should institute preparatory classes which will operate an entire school year. (1 ref.) *R. K. Butler.*

No address

1211 PETROVA, V. G. *Prakticheskaya i Umstvennaya Deyatel'nost' Detei-Oligofrenov (Practical and Mental Activity of Oligophrenic Children).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1968, 157 p. (Price unknown.)

This book gives results of experimental psychological studies in the area of practical activities of remedial school students. The focus of the book is to show that, although there are significant psychic deficiencies in oligophrenic children, there are possibilities for their development and these should be a part of the remedial work. (96-item bibliog.) - *R. K. Butler.*

CONTENTS: Organization of Remedial Work and the Practical Activity of MR Children; Value of Practical Activity for Independent Learning of Specific Subjects by Second-Form MR Students; Learning of a Specific Subject by MR students with the Help of Adults; Practical Activity and Learning of Subjects by Fourth- and Sixth-Form MR Students; Conclusions; Literature.

1212 WRIGHT, LEORA. Pre-school programs for the mentally retarded in Canada. *Deficience Mentale/Mental Retardation*, 19(1): 8-12, 1969.

The Canadian Association for the MR has established preschool education programs to provide the young MR with a nursery program during their crucial developmental years. The programs, set up by province, teach the MR awareness of self and the environment, interpretation of experience, and communication skills and give mothers a respite, guidance and support, and an opportunity to communicate with other parents and professionals. Seven provinces have 121 programs for 1,364 MR preschoolers. Problems include shortage of funds, trained personnel, and research in MR nursery programs. (4 refs.) *M. Plessinger.*

University of Toronto
Toronto, Ontario, Canada

1213 CHOROMANSKI, FREDERICK. Norwalk plans for special education. *Digest of the Mentally Retarded*, 5(2):85-90, 1969.

The special education program in Norwalk (Connecticut) was developed so that EMRs (by completing the adapted program of social development, work training, regular attendance, and maximum academic achievement) could receive a high school diploma and graduate with students from regular classes. A teaching team, made up of 3 teachers and a teacher's aide, conducts classes in language arts, social studies, vocational information, mathematics, science, driver training, typing, and group guidance; a few students are able to take some of these subjects with regular classes. All special education students participate with regular students in music, physical education, crafts, home economics, industrial arts, and extracurricular activities. Emphasis is placed on the knowledge and experience which will best help the child to become a contributing member of the community, socially and occupationally. (No refs.) - *E. F. MacGregor.*

Brien McMahon High School
South Norwalk, Connecticut

1214 MAGLIOCCO, ANTHONY J. Developments in the special education program for the town of Vernon. *Digest of the Mentally Retarded*, 5(2):106, 109, 1968-69.

Through an expanded social and work program, Talcottville School (Connecticut) is preparing moderately and mildly retarded children for life in the community. An after-school activity group includes both MRs and normal children; a job-study program trains and finds employment for mildly MR students; and a lunch program combines domestic and social skills. (No refs.) - *E. F. MacGregor.*

Town of Vernon Schools
Vernon, Connecticut 06086

1215 IND, SUSAN. The Jacaranda school, Nairobi, Kenya. *Parents' Voice*, 19(2): 16, 1969.

The newly expanded private Jacaranda School trains fee-paying and donation-supported MRs who are African, Asian, and European. The curriculum includes: a nursery program, therapy for physical and speech handicaps,

physical education, cooking, gardening, maintenance training, and typing. Advanced training is limited to employment within their family or return to primary school. (No refs.) - *M. Plessinger.*

No address

1216 DUROJAIYE, M. O. A. Occupational choice and special education of educationally subnormal children. *British Journal of Educational Psychology*, 39(1):89-90, 1969.

When queried about their occupational choices and aspirations, more EMR Ss attending special schools selected unskilled jobs than did EMRs in special classes in ordinary schools and non-EMRs in ordinary schools in each age group (8-10, 11-13, 14-16 yrs) and for both sexes. Follow-up of 120 ex-pupils showed close agreement between the jobs they selected before leaving school and those they held after leaving school. The degree of occupational adjustment was not related to the type of schooling received. Factor analysis revealed that school variables load substantially on the occupational awareness factor which was one of the most important in occupational choice. The curriculum of the special schools was more employment-oriented than that of the secondary schools with special classes. One-hundred administrators, 100 teachers, and 540 students equally selected by sex, age, and type of school participated in the study. (No refs.) - *A. Huffer.*

No address

1217 BRINEGAR, LESLIE. Indiana's work-oriented program for educationally handicapped students in secondary schools. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 47-53.

The rationale behind "The Pre-Employment Vocational Experience Program" is the concept that optimal secondary school programing for the EMR can only be realized when the consultive and financial support of the Divisions of Vocational Education, Special Education, and Vocational Rehabilitation focus jointly upon the problem. This ability to utilize the professional and financial resources of all 3 divisions enables the pre-employment vocational coordinator to perform the necessary supportive and supervisory responsibilities of in-school and community-based work activities for both special education and/or vocational rehabilitation student-clients. Also the instructional resources provided by one division may be utilized by all students. A unique aspect of the program is that the Vocational Rehabilitation Division is able to purchase work evaluation services, personal and work adjustment training, and work training for individual student-clients from public schools. (No refs.) - *C. L. Pranitch.*

1218 BREEDING, PAUL A. Rehabilitation programs and services in schools developing a statewide plan for work-study programs. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968) Washington, D. C., American Association on Mental Deficiency, 1968, p. 38-46.

A cooperative school-rehabilitation program is a formalized commitment of the 2 agencies to integrate effectively their services so that the handicapped youth is scarcely aware of the point at which education ends and rehabilitation begins. School services to youth enrolled in such programs include academic instruction, library services, health and physical education, and general vocational skills (homemaking and manual arts). Vocational rehabilitation services may include evaluation, counseling and planning, work adjustment, job training, placement, and follow-up. In joint programs, school services must be financed without participation of vocational rehabilitation funds; however, rehabilitation expenditures may come from the state agency's regular appropriation, special funds allotted to the state rehabilitation agency by a local governing body such as city council or county board of supervisors, or from local school boards. In administrative procedures, the vocational rehabilitation agency makes final decisions in the rehabilitation services program and the school has final authority in all school services, although both agencies plan jointly. (No refs.) - *C. L. Pranitch.*

1219 PIASKOWSKI, ROBERT. (Mrs.) Teaching retarded how to meet everyday life. *Progressive Teacher*, (March):6-7, 1969.

The Walworth County (Wisconsin) Special School for 87 EMRs (ages 7-17 yrs) aims to

educate the students by using real life experiences to prepare them for community life. The principal, who is the driving force, gained experience in MR classes in a city school and now plans special curricula, not diluted from normal classes. In addition, the school is free from stressful competition with normals. The special curriculum includes arithmetic which emphasizes practical application, social studies which centers on the home and community, language arts which stresses useful vocabulary for health and safety, and home economics and shop which develop social skills for life and employment. Job training is geared to jobs available in the area and placement and community cooperation are part of the program. (No refs.) - *M. Plessinger.*

Walworth County Special School
Walworth, Wisconsin 53184

1220 FINCH, ROBERT. Total environment is our concern. *Instructor*, 79(1):54, 1969.

School buildings and equipment in the United States have, for the most part, been modernized, and efforts have been made to improve and coordinate the child's classroom and out-of-school environment. However, the teacher is still the most important influence in the pupils' school experience. (No refs.) *E. F. MacGregor.*

Department of Health, Education, and Welfare
Washington, D. C.

1221 TLC helps teach retarded. *Medical World News*, 10(13):G40-G41, 1969.

At a nursery school for institutionalized SMR in Surrey, England, the pupils (CA 2 1/2-16 yrs; MA 18 mos-4 yrs) learn self-help, socialization, communication, and pre-industrial skills. Much learning comes as a by-product of play: dressing themselves from dressing-up, self-feeding from birthday parties, washing hands following finger-painting, and cooperation from participating in the rhythm band. The progress of the 110 children, divided into classes of 10, demonstrates that encouragement and affection are essential ingredients in the learning process. (No refs.) *E. F. MacGregor.*

1222 HARRISON, ALTON, JR.; & SCRIVEN, ELDON G. The slow learner: Don't expect too much of him. *School and Community*, 55(9):30, 36-37, 1969.

Realistic teacher expectations of the capabilities and progress of slow learners are essential if the teacher is to plan lessons and other classroom activities which will aid each child to develop to his fullest potential. The teacher should provide materials that are related to the slow learner's goals and can be presented in a relatively short time. With supervision, encouragement, and attention, and the child's active participation in the learning process, a great deal can be accomplished. (No refs.) - *E. F. MacGregor.*

Northern Illinois University
DeKalb, Illinois 60115

1223 BRADLEY, BETTY HUNT. Educational and psychological services for the mentally retarded deaf: A selected annotated bibliography. *Mental Retardation Abstracts*, 7(4): 655-665, 1970.

A bibliography covering the literature from 1959 to 1969 and dealing with assessment, clinical characteristics, and educational training of deaf MRs is presented. Problems involved in teacher training, suitable curriculum, and reliability and validity of diagnostic instruments are areas of major concern. Refined assessment procedures are expected to increase the number of deaf MRs identified, thus necessitating increased services for this group. (91 refs.) *M. D. Nutt.*

Columbus State Institute
Columbus, Ohio 43223

1224 KOVALEVA, E. A. Opyt obucheniya unstvenno otstalykh shkol'nikov sel'skokhozyaistvennoi spetsial'nosti (Experiment in teaching agricultural specialities to MR students). In: D'yachkov, A. I. *Materialy Nauchnoi Konferentsii po Defektologii (Materials of a Scientific Conference on Defectology)*. Moscow, Union of Soviet Socialist Republics, RSFSR Academy of Educational Sciences Press, 1962, p. 36-45.

The preparation of MR students for practical activity is one of the main problems of remedial schools. An experiment in teaching female 15- to 16-year-old seventh-grade MR Ss how to milk cows by hand was carried out.

After teaching the correct method of milking and personal and zoo hygiene, the milking time approximated that of normal workers, but the time taken between cows was greater. It was concluded that MR Ss can assimilate not only the most basic elements of zoo technology but also carry out simple practical (hand) milking while undergoing specially organized instruction, the Ss were unable to recognize in interrelationships all the combinations of zoo technical knowledge, and the practical fulfillment by the Ss of corresponding duties during the work occurred only under the constant leadership of the teacher. (No refs.) - *R. K. Butler.*

No address

1225 KARVYALIS, V. YU. Podogotovka uchashchikhsya mladshikh klassov vspomogatel'noi shkoly k usvoeniyu umeneniya planirovat' svoyu rabotu (Preparation of students of the lower grades of a remedial school to master the art of planning their own work). In: D'yachkov, A. I. *Materialy Nauchnoi Konferentsii po Defektologii (Materials of a Scientific Conference on Defectology).* Moscow, Union of Soviet Socialist Republics, RSFSR Academy of Educational Sciences Press, 1962, p. 46-55.

Vocational education in general and handiwork in particular play an important role in the development of MR children. Since the process of making objects must be carried out in a determined sequence, the student's understanding of this sequence is a necessary condition in forming the art of planning his own work, an important factor in his mental development. Forty-five MR and 5 normal first graders were given the task of making a revolving stand, a toy writing desk, and a toy wagon, while a control group was instructed to make a toy tractor. Questions asked the Ss before and after included "What is it made of?" and "How do you make it?" Some Ss did not know the name of the object they were making; when asked, none of the MR Ss indicated the need for paste and brush, but during the work, they selected the necessary items. After the first series, the answers to the questions improved and became more complete, and the Ss could more fully discuss the sequence of actions. In making the toy wagon for the first time, all Ss selected the sides, body, and wheels, but only 68% of the MR Ss selected nails, 14% chose the hammer, and none selected the ruler. On the second try, 95% of the MRs selected the nails, 64% the hammer, and 36% the ruler. Apparently, for the MR S to learn to plan his own work, he must learn to analyze the sample as a whole and establish the relationship of the parts, to select or prepare the necessary tools and materials, to observe a determined sequence in practical work on a prepared object, to practice self-control by comparing his work with the sample, and to discuss the finished work. (No refs.) - *R. K. Butler.*

1226 STEWART, G. KINSEY; & CODA, ELVIS J. An integrative multidiscipline approach to the multihandicapped preschool child. In: Wolf, James M.; & Anderson, Robert M., eds. *The Multiply Handicapped Child.* Springfield, Illinois, Charles C. Thomas, 1969, Chapter 15, p. 206-210.

The developmental program at the Kennedy Child Study Center enrolls 6-8 children at one time (CA 4 and under) who have one or more mental or physical handicaps. A composite diagnosis for each child is obtained from multiple disciplines (pediatrics, psychology, and psychiatric social work). Goals of the program, implemented through the efforts of an occupational therapist, a speech therapist, a special education consultant, and volunteers, are improvement in gross and fine motor skills, establishment of neuromuscular patterns, experience in creative activities, stimulation in receptive and expressive language, initiation of independent activities, emotion control, and cooperation with peers and adults. For an hour each week the mothers participate in a psychotherapeutically oriented discussion group which provides an exchange of ideas, specific information, observation of the children, and feedback. During the sessions, the mothers are prepared for the eventual graduation of their children into the most appropriate program. Therapies, schools, and other possibilities are discussed. A formal exit interview with parents and the staff members evaluates what the program has done and assists the parents in the transition to the next phase of care for the child. (No refs.) - *C. L. Pranitch.*

1227 WOLF, JAMES M.; & ANDERSON, ROBERT M. Compendium and Comments. In: Wolf, James; & Anderson, Robert M., eds. *The Multiply Handicapped Child,* Springfield, Illinois, Charles C. Thomas, 1969, Chapter 30, p. 360-389.

A need exists for an educationally conceived classification scheme for multiply handicapped children. Previous classifications have been based upon medical models and have not provided the essential information for teaching handicapped children. Emphasis must

be shifted from multiple disabilities to the handicapping consequences (the educationally significant factor) of the disabilities. A systematic approach is needed for educating children who are having learning problems in school. In one such approach, diagnostic findings are translated into educational implementation after considering 3 main dimensions: problem variables, such as the disability and handicap; situational variables, such as the time factor, social conditions, and therapeutic conditions; and school variables, such as materials, teaching methods, and building designs. New classification schemes and techniques such as the above offer an approach to solving the problems of abilities needed by teachers of children with one or more disabilities, in addition to providing a conceptual framework for formulating educational procedures to be used with multiply handicapped children. (No refs.) - *C. L. Pranitch.*

1228 SHULMAN, NAHUM B. The education of brain-injured children. *Jewish Parent*, 20(2):20-22, 1969.

Brain-injured children participating in a special class program that is geared toward meeting their basic individual needs are able to learn, profit, mature, and achieve academically. The growth of brain-damaged children to a large extent depends upon the understanding, appropriate handling, and consistent managment in helping them to work through many of the social, emotional, educational, and environmental difficulties that they encounter. It is important that handicapped children be seen for a comprehensive diagnostic study and evaluation. The Maimonides Centers in New York provide specialized services to children with complex learning and emotional difficulties. (1 ref.) *S. Half.*

Maimonides Institute
Far Rockaway, New York 11601

1229 VALETT, ROBERT E. *Programming Learning Disabilities*. Palo Alto, California, Fearon Publishers, 1969, 244 p. $10.50.

Primarily aimed at teachers, psychologists, and administrators concerned with creating and operating learning disability programs, the book presents a framework for the actual programing of learning disabilities in an attempt to bridge the existing gap between theory and practice. Program success appears to be dependent upon a solid frame of reference and not on the inclination of well-trained individual teachers. The stages in over-all programing are planning, including the development of an operational rationale and consideration of its implications in practice, implementation with emphasis on psychoeducational evaluation by the responsible teacher, and remediation. Individualized instruction, classroom organization and materials, parent involvement, in-service training, and supporting services are discussed in depth; guidelines are graphically presented in 40 detailed figures. (62 refs.) *D. F. McGrevy.*

CONTENTS: A Rationale for the Programing of Basic Learning Abilities; The Basic Learning Abilities; A Model District Policy Statement; Preliminary Screening and Identification; Psychological Evaluation; A Developmental Task Approach to Early Childhood Education; The Diagnostic-Prescriptive Teacher; The Development of Sensory-Motor and Perceptual Skills; Prescriptive Programing; Program Organization; Behavior Modification Through Psychoeducational Programing; Supporting Programs and Services.

1230 HELMUTH, JEROME, ed. *Disadvantaged Child: Head Start and Early Intervention--Volume 2*, New York, New York, Brunner/Mazel, 1968, 612 p. $12.50.

This consideration of Head Start and early intervention programs includes discussions of the relevance of environmnetal and genetic theories for educational practice, the function of intellectual and social assessment in education, the relationship between development and learning patterns and health and nutrition, the relationship between ecological factors and language development and learning, and the problems involved in the evaluation of massive educational innovations. Programs for the education of the disadvantaged should move away from an emphasis on heredity and/or environmental limitations toward attempts to find better matches between individual heredity patterns and those patterns available in the environment. Assessment procedures which evaluate effective and cognitive differentiation processes can provide dynamic qualitative analyses of how children function under different conditions. Studies which relate the assessment of neurological status to the learning process may provide data which can be used to design and manage appropriate individual learning experiences. Various current Head Start programs emphasize socialization, free

play, perceptual training, language development, and custodial care either alone or in various combinations. Practices in several programs are described and information on Head Start health care, training, follow-up, and local practices are discussed. Extensive bibliographies on the disadvantaged, preschool education, and preschool and early childhood education are included. This book would be of interest to educators, special educators, psychiatrists, psychologists, public health nurses, pediatricians, and social workers. (699 refs.; 238-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Introduction (Gordon); Photo Section; The Culturally Disadvantaged and the Heredity-Environment Uncertainty (Jensen); A Culture-Fair Instrument for Intellectual Assessment (Rosenberg); Pediatric Care in Project Head Start (North); The Neurological Evaluation of Children in Head Start (Ozer); Evaluation of Psychiatric Reports of Head Start Programs (Hotkins, Hollander, & Munk); Volunteers for Visions (Kraskin); Head Start Health: The Boston Experience of 1965 (Mico); Subcultural Differences in Child Language: An Inter-Disciplinary Review (Cazden); Analysis of Story Retelling As a Measure of the Effects of Ethnic Content in Stories (John & Berney); Head Start and First Grade Reading (Ramsey; An Autotelic Responsive Environment Nursery School for Deprived Children (Meier, Nimnicht, and McAfee); New York City Head Start: Pluralism, Innovation and Institutional Change (Ginsberg & Greenhill); Subculture Values: The Pivot of the American Dream (Broman); Preschool Intervention through a Home Teacher Program (Weikart & Lambie); A Retrospective Look at the Experiences of a Community Child Guidance Center with Project Head Start (Shaw, Eagle, and Goldberg); Head Start--Measurable and Immeasurable (Omwake); An Analysis of Current Issues in the Evaluation of Educational Programs (Zimiles); The Long View (Shriver); New Careers in Head Start (Benoit); Follow Through: Fulfilling the Promise of Head Start (Egbert).

1231 VLASOVA, T. A.; & PEVZNER, M. S. *Uchitelyu o Detyakh s Otkloneniyami v Razvitii (Handbook for Teachers of Children with Developmental Disabilities).* Moscow, Union of Soviet Socialist Republics, Prosveshchenie Press, 1967, 206 p. (Price unknown.)

The purpose of the book is to show teachers the nature and characteristics of children with deviations and anomalies, particularly their occurrence, developmental patterns, and procedures and methods for their correction and compensation. The book is original research based on many case histories. This handbook will be an invaluable aid to remedial school teachers in making them more fully aware of these deviations. (21-item bibliog.; 4 refs.) - *R. K. Butler.*

CONTENTS: Main Stages in the Psychic Development of Children; Interrelationships between Learning and Development; Children with Ear and Speech Disturbances; Children with Visual Disturbances; Oligophrenic Children; Children with A Time Lag in Their Psychic Development; Children with Asthenic Conditions; Children with Reactive States and Conflicting Experiences; Psychopathic Forms of Child Behavior; Initial Occurrences of Psychic Diseases in Children; Educational Study of Children with Developmental Disturbances; Dictionary of Special Terms; Recommended Literature.

1232 ELGAR, SYBIL; & WING, LORNA. *Teaching Autistic Children.* (Guide Lines for Teachers No. 5.) London, England, National Society for Autistic Children, 1969, 32 p.

A school curriculum planned to meet the special educational, emotional, and social needs of autistic children provides a structured and secure environment in which individualized programs aim to minimize problems in understanding and using language, emotional immaturity, difficulties in carrying out organized movement patterns, lack of motivation, and limited powers of concentration. Individual behavior problems are handled firmly in ways that discourage difficult behavior and encourage forward development. Formal school work begins with sensory education and proceeds to number work, language, and reading. Practical skills in home economics, physical education, music, and art are also included. The children quickly develop positive emotional relationships with the adults in the school. They are taught to make gestures of affection toward others, and no attempt is made to cuddle or kiss them until they indicate a desire for such a contact. The systematic teaching program for social behavior includes the provision of experiences appropriate to the child's level of functioning. No specific qualifications are required for teachers of autistic children. However, they should have personal qualities of confidence, persistence, patience, flexibility, ingenuity, and imaginative insight as well as toughness, resilience, and mental energy. (No refs.) - *J. K. Wyatt.*

1233 WING, LORNA. Aspects of special education: Autistic Children. *Child Education*, 46(6):8-10, 1969.

Appropriate special education can help autistic children take their respective role in the community and find a certain amount of interest and happiness in life. Advance in social awareness and improved behavior can be obtained in many cases by the utilization of varied skills, methods, and techniques. IQ tests reveal that some of the autistic children have normal functioning, others are below the norm, and some function in the SMR range. It is generally better for these children to remain at home in an environment that will encourage improvement and participate in special education programs where individual attention from experienced professionals is provided. Although the National Society for Autistic Children has opened 2 schools for children with autism, there is a definite need for additional pre-schools and secondary schools of this type and more skilled, trained staff. Early detection is vital and special education should commence as soon as possible. Frequently, autistic behavior is associated with severe subnormality which results in acute behavioral problems. The degree of flexibility in meeting the special needs of autistic children can be helped by the transfer of responsibility of these youngsters to the Department of Education and Science. (No refs.) - *S. Half.*

No address

1234 RAUCHFLEISCH, UDO. Vergleichend-experimentelle Untersuchung der Musikalitat bei Volks- und lernbehinderten Sonderschulern (A comparative experimental study of musical ability in grade school and special education children). *Heilpadagogische Forschung*, 2(1):1-26, 1969.

A set of tests, such as clapping out a rhythm, singing an interval, recognizing differences in pitch, and finding mistakes in songs, was administered to 47 primary and special education pupils and results showed the latter to be deficient in their performance. In the simplest test, clapping out a rhythm, the performance of the special education pupils was almost equal to the normals, but their performance fell off rapidly as the difficulty of the tests increased. Apparently, there is a relationship between intelligence and musical ability. (13 refs.) - *S. L. Hamersley.*

Landeskrankenhaus
Schleswig, West Germany D 2380

1235 McCLELLAND, ETTA. Music for the trainable mentally retarded. *Deficience Mentale/Mental Retardation*, 20(1):18-20, 1970.

Music provides the MR with enjoyment, an opportunity to express themselves and establish wholesome interpersonal relationships, helps them to assume their respective role as part of a group, aids them to achieve a sense of accomplishment, and helps them improve their coordination. By active participation in a structured music program, the MR can increase their attention span, improve their communication ability, learn to adjust to new situations, improve eye-hand coordination and enhance their ability to relate in a meaningful way. Various methods, special materials, techniques, and skills have been successfully utilized in teaching the TMR music appreciation. It further enhances their ability to memorize, imitate, comprehend, and become more aware of oneself. (4 refs.) *S. Half.*

No address

1236 LEVETT, LISBETH M. A method of communication for non-speaking severely subnormal children. *British Journal of Disorders of Communication*, 4(1):64-66, 1969.

At Meldreth School, England, SMRs (ages of 5-16 yrs) with physical handicaps were enrolled in a communication development program which was successful to varying degrees with 85% of the Ss. Of the 12 Ss who did not improve, 7 were classified as deaf, 1 was grossly dysarthric, and 4 understood speech but did not speak. Of the 5 methods considered, mime, the use of facial expression, hand movement, and whole body movement, was selected as the method of communication. A 100 mime vocabulary was selected and appropriate gestures were developed. The words were chosen from the vocabulary of the Ss, and a list of words suggested by psychologists and school staff. Since it was considered essential that the children use their mime vocabulary throughout the whole day, the entire staff was trained through a series of photographs showing relevant mime. (1 ref.) *E. Hatoon.*

Meldreth Training School
Meldreth, Royston, England

1237 WARNER, FRANCIS A. Visual and auditory learning of the mentally retarded. *Digest of the Mentally Retarded*, 5(3):162-163, 208, 1969.

EMRs learn information fastest when it is introduced through the visual sense, and retention is longer for this method than for information introduced through the auditory sense or combined auditory and visual senses. The Ss were 59 EMRs who were subjected to paired-association learning tasks with immediate and delayed recall. Results showed that visual learning was superior, auditory learning was slowest, age increased the effectiveness of visual learning, and there was no difference between male and female performance. Implications are: learning should be geared to the individual's most receptive sense; introducing information through 2 senses may slow EMR learning; visual materials should be used for rote learning; the teacher should talk very little so the EMRs can use their other senses; and individual EMRs differ as to their strongest learning sense. (4 refs.) - *M. Plessinger*.

San Francisco State College
San Francisco, California

1238 DUNHAM, PAUL, JR. Teaching motor skills to the mentally retarded. *Exceptional Children*, 35(9):739-744, 1969.

The development of motor skills is important to the MR and can often be significant in their attainment of an adequate level of social competence. In teaching motor skills, it is important to evaluate and program for each student individually, set realistic goals, maximize rewards, and use punishment sparingly. The retarded child should be expected to develop slowly, and short frequent practice sessions can be more beneficial than longer less frequent ones. Consistency, patience, and adequate record keeping are also important. (31 refs.) - *J. M. Gardner*.

King's College
Briarcliff Manor, New York 10510

1239 EARLY, GEORGE H.; & KEPHART, N. C. Developing perceptual-motor skills: Perceptual motor training and academic achievement. *Academic Therapy Quarterly*, 4(3):201-206, 1969.

Perceptual-motor training was used to supplement academic training with a 9-year-old, third-grade boy with a reading problem. A 9-week remedial program was based on gross motor training and eye-hand coordination, along with perceptual-motor matching and regular academic training. Post-test measures indicated improvements in balance, posture, differentiation, and perceptual-motor matching, along with increases in all areas of reading difficulty. (3 refs.) *J. M. Gardner*.

Purdue University
West Lafayette, Indiana 47907

1240 APPELL, LOUISE S. Teacher idea exchange: A potpourri of helpful hints. *Teaching Exceptional Children*, 1(2):63, 1969.

Ideas are given for use in teaching children left-right discrimination, letters and numbers by sense of touch, table setting, and care in handling dangerous objects as well as the adaptation of common objects to help solve the grasping problems of handicapped pupils. (No refs.) - *E. F. MacGregor*.

No address

1241 DE LEON, SHIRLEY. The great joy of the first written word. *Children's House*, 3(2):4-5, 1969. (Editorial)

The feeling of some educators that a child's failure to learn to read is explained by an illiterate background is directly opposed to Montessori's idea that lack of education in the home results in a lack of barriers to the school's educational influence. It appears that the poor child's failure to learn is the result of ineffective teaching procedures rather than an impoverished background. (No refs.) - *E. F. MacGregor*.

1242 PEACH, WALTER J.; & LEWIS, BEVERLY. Automated reading instruction for educable mentally retarded adolescents. *Slow Learning Child*, 16(1):15-19, 1969.

Reading instruction machines (Tach-X and Controlled Reader) are more effective than regular classroom instruction in teaching EMR adolescents to read faster with better comprehension. The Ss were 14 EMRs (CA 13 to 18 yrs; IQ 58 to 82) and a control group of 9 Ss (CA 14 to 16 yrs; IQ 79 to 101). The Tach-X has timed exposures to build concentration, perception, and retention, and the Controlled Reader has a moving slot to uncover reading material at a fixed rate. The Gates Reading Survey was used as a pre- and post-test. At the end of the school year, the Ss' reading

improved 0.3 to 5.3 (mean of 1.5) grades while the control group's reading improvement varied from -0.1 to +2.4 (mean of 0.9) grades improved. The experimental sample improved in vocabulary, speed, and comprehension. (11 refs.) - *M. Plessinger.*

Central Missouri State College
Warrensburg, Missouri 64093

1243 GREENWOOD, G. Using the new keyword tapes with slow learning children. *Remedial Education*, 4(2):101-102, 1969.

Classroom utilization of the keyword tapes significantly improves the reading skill, ability, and comprehension of slow learning children. By means of this approach children are taught to read material with rhythm modulation--the melody stresses the relationship between the sentences. Paragraphs are set to music and the rhythm emphasizes the value of the functional words. (No refs.) - *S. Half.*

No address

1244 TIMPANO, DORIS M. How to run an audio-visual program with low I.Q. students. *Digest of the Mentally Retarded*, 5(3):167-169, 172, 1969.

EMRs in special education classes (IQ 50-75) effectively operated a school's audio-visual department and, at the same time, gained self-confidence. Unable to take normal students from classes to operate equipment, a director of visual aids in a school of 1,200 students turned to special education classes which were less rigidly structured. The training of the 12 EMRs consisted of 3 weeks of daily 1/2-hour sessions on equipment operation and care, procedures on taking teachers' orders, finding machines and associated materials, and how to assist teachers in the selection of materials and equipment. The EMRs were conscientious, worked well, gained feelings of prestige, fulfilled a needed school function, and were motivated to learn. (No refs.) - *M. Plessinger.*

Richard S. Grossley Jr. High School
Jamaica, New York

1245 LAPUMA, JESS A. Videotape programming for the trainable mentally retarded: An aid to the classroom teacher. *Special Education in Canada*, 43(3):22-23, 1969.

Television is an effective teaching tool; however, its usefulness could be enhanced by audio-visual playback equipment. This would allow the teacher greater flexibility in scheduling classes and in adjusting the course to the requirements of the students. A wide variety of programs could be available to the teacher from a tape library. This new aid to teaching should be explored further. (No refs.) - *J. M. Gardner.*

P. O. Box 480
Jefferson City, Missouri 65101

1246 AMARIA, RODA P.; BIRAN, L. S.: & LEITH, G. O. M. Individual versus co-operative learning. *Educational Research*, 11(2): 95-103, 1969.

A series of experiments designed to determine the benefits from individual versus co-operative learning experiences on programed instruction was reported. A pilot study involving 36, 10-year-old children enrolled in a junior school in England employed 3 groups (individual, homogeneous ability pairs, and pairs of above and below average ability) who were administered a self-instruction teaching program. Results showed that mixed ability pairs scored highest, homogeneous pairs scored second, and individual workers received the lowest scores. Heterogenous groups scored significantly higher, but there were no statistically significant differences between the other groups. The second experiment with the same procedures and task employed 72, 12-year-old children from a mixed secondary school with an average IQ. The mean low IQ groups were 89 (boys) and 85 (girls). Results did not show significant differences between ability levels or sexes, but the transfer-test showed that co-operative learning was better. Three additional experiments were completed in secondary schools involving high- and low-ability children. There were some changes in procedures with elimination of individual work treatment in 2 of the schools. Results of the post-test data and transfer data favor the heterogenous method of pairs although differences were slight. The heterogenous conditions seem more effective for low-ability children. Girls performed better in mixed pairs, but boys appeared to do better in homogeneous groups. Co-operative learning on a task of this type seems

to be preferable to individual learning, especially for the low-ability Ss at the junior and secondary levels. (3 refs.) *B. Bradley.*

Birmingham University
Birmingham, England

1247 SEANDEL, ANTOINETTE. Listening activities. *Journal for Special Educators of the Mentally Retarded*, 4(1):47-48, 1969.

Listening activities for gross sounds include identifying sounds heard in classrooms, halls, streets, and voices. Sound patterns can be learned from clapping and finger-snapping patterns or the loudness and softness of sounds. Simple commands followed by more complex directions helps the children to learn to follow directions. Other activities include listening to a series of numbers, rhyming, listening for classification of objects or words and listening to a story and retelling it. (No refs.) - *V. G. Votano.*

No address

1248 McCONNELL, FREEMAN; HORTON, KATHRYN B.; & SMITH, BERTHA R. Language development and cultural disadvantagement. *Exceptional Children*, 35(8):597-606, 1969.

Culturally deprived, preschool children who participated in a language and sensory-perceptual instruction program demonstrated significant gains in intellectual, perceptual, and linguistic functioning after one year when compared with a control group enrolled in a traditional kindergarten-type program. The experimental group consisted of 128 children (111 Negro, 17 Caucasian; CA range 2 yrs 8 mos to 5 yrs 4 mos). The control group was composed of 57 children. The experimental and control Ss attended community day care centers located in the lowest socioeconomic areas of Nashville (Tennessee). The experimental program was designed to counteract the inhibiting effects of cultural deprivation on perceptual and language learning. The first year language program emphasized receptive language and the development of increased listening skills and attention span, and the second year program emphasized sentence structure, verb endings, and word forms. The Peabody Language Development Kit, Preschool Level was presented on a daily basis. Sensory-perceptual training emphasized the development of visual, auditory, and tactual senses. Stanford-Binet IQ gains for 3, first-year experimental groups were 16.5, 15.6, and 24.8 points, respectively. On the Frostig Developmental Test of Visual Perception, experimental Ss gained significantly on 4 of 5 subtests and a mean of 19.1 points from pre- to posttraining scores. Pre- and posttraining ITPA data for 19 Ss revealed a gain of 15 months in Language Age. Intelligence test data on 21 experimental Ss who participated in the program for 2 years demonstrated that gains in intelligence had been maintained. (19 refs.) - *J. K. Wyatt.*

Vanderbilt University
Nashville, Tennessee 37203

1249 FINEMAN, KENNETH. Teaching speech through use of operant conditioning involving systematic visual-color reinforcement. *Forum*, 5(1):1-14, 1969.

Speech usage was increased in two male Ss, a 31-year-old moderately retarded male and an 8-year-old autistic boy. Both had a small vocabulary and rarely spoke. Each S was seated in front of a television-like screen onto which colors were presented for each verbal response. No other reinforcement was given. Correct responses and spontaneous use of speech increased for both Ss. A one-year "informal" follow-up indicated that the positive effects were maintained. (20 refs.) *J. M. Gardner.*

No address

1250 CLINE, KATHY. A symbol cookbook program. *Teaching Exceptional Children*, 1(4):101-105, 1969.

A symbol cookbook was used to teach various skills and self-confidence to non-reading MR girls (CA 14 to 18 yrs; IQ 38 to 49). After the MRs became familiar with the kitchen, they learned hand washing and vegetable peeling, identification and meal planning from empty food containers and pictures, measuring symbols, stove use, and self-confidence through praise and encouragement after accidents. Each girl made a symbol cookbook with sample menus and mimeographed recipes and prepared one meal a week, and participated in field trips and related activities (shopping trips, traveling in the community, sewing, and handling money). Parent cooperation was necessary and in monthly meetings they learned jobs the MR could perform. Freedom in the home will determine if learning continues; however, benefits were seen in that vocabulary, confidence, perception, and willingness to try new things increased. Manipulating

objects to get concrete results built motivation and a feeling of worth and achievement. Expenses were met by local agencies contributing money and each MR bringing 75-cents weekly. (No refs.) - *M. Plessinger.*

Wright State University
Dayton, Ohio

1251 BOOTS, HELEN B. The retarded teenager in the home economics program. *Journal of Home Economics*, November, 1968.

A home economics curriculum for MR teenagers should develop the individual's potential and teach living skills. Classes must have dignity and be geared to the MR's learning capacity and motivation; have flexibility to give success experience, be orderly and geared to individual needs, allow for related arithmetic learning of money and weights and measures, provide for new MRs entering during the year, be in a home setting to encourage security and insight into group living, utilize games to teach basic food groups and sewing materials, and use few recipes to avoid confusion. (No refs.) - *M. Plessinger.*

Lakeland Village School
Medical Lake, Washington 99022

1252 TAYLOR, Z. ANN; & SHERRILL, CLAUDINE. The development of a core curriculum in health and safety education for trainable mentally retarded children. *Journal of School Health*, 39(2):153-158, 1969.

A 10-week demonstration project in self-care and social skills was undertaken with 9 TMR children (CA 10 to 13 yrs) of varying diagnoses. Training consisted of participation in a "core curriculum" in health and safety education. This was defined as centering all experiences (such as arts and crafts, music, and language) around the areas of health and safety. The Ss were periodically evaluated on specially constructed, 5-point rating scales. Improvement was noted. (No refs.) *J. M. Gardner.*

Bishop College
Dallas, Texas

1253 BREITENBECK, GERARD R. *Sex Instruction for the Retarded Boy*. Ligouri, Missouri, Liguorian Pamphlets, 1969, 24 p. $0.15.

Since MR boys are sexual human beings and require proper instruction in this area, parents must develop proper attitudes toward sex and possess an understanding of adequate methods and verbalizations to utilize in their teaching of sexual instructions to their MR child. MR boys should be taught, within their limitations, proper words and terminology associatd with sex. The MR child should be trained to be modest at an early age, and family members should also exercise this modesty and set an example for the MR youth. (No refs.) - *S. Half.*

1254 TUCKER, MARK M. *Physical Education for the Educable Mentally Retarded*. Edwardsville, Illinois, Southern Illinois University, 1969, 35 p.

Physical education programs for the EMR should be designed to provide them with meaningful experiences and enjoyable activities through which they will develop physical fitness, emotional control, qualities of leadership, neuromuscular and social skills, a sense of fair play, and good sportsmanship. A well planned, organized and structured program should be a socializing experience encouraging respect for others, foster a sense of acceptance, and afford an opportunity for successful participation in group play activities. Regardless of the academic level educational experiences should be geared toward developing citizenship, basic skills, health and safety attitudes, vocational aptitude, wholesome use of leisure time, sound thinking, interest in current events, and knowledge about successful family living. (15 refs.) *S. Half.*

1255 American Association for Health, Physical Education and Recreation, and National Recreation and Park Association. *Physical Education and Recreation for Handicapped Children: A Study Conference on Research and Demonstration Needs. Preliminary report.* May 1969, 24 p. (Project No. 182-704.)

Participants of a study conference called for an in-depth, longitudinal look at the changes (physical, mental, social, emotional, and ethical) and causes of change brought about in a handicapped person through physical activities. Present instructional methods and materials should be evaluated as well as how

participation in recreation affects learning. A good information retrieval and dissemination system is needed by the profession to share and improve programs. Mass media should be used to gain public support of special programs. Although Title V of Public Law 88-164 has been important in recent program developments, legislation needs more evaluation in areas of funding, certification requirements, and liabilities. A model program of personnel recruitment should be established, and why people volunteer should be studied. Training of personnel should be based on clear definitions of jobs at sub-professional, paraprofessional and professional levels. Professionals should develop models for integrating the handicapped into non-handicapped community agency programs, analyze skills involved in various activities, develop individual-community links, help parents teach their handicapped children, and develop programs to help handicapped Ss become "recreationally independent." (No refs.)
S. Markworth.

1256 GADZINSKAYA, R. D. K voprosu o fizicheskom vospitanii umstvenno otstalykh detei (Physical education of mentally retarded children). In: D'yachkov, A. I. *Materialy Nauchnoi Konferentsii po Defektologii (Materials of a Scientific Conference on Defectology).* Moscow, Union of Soviet Socialist Republics, RSFSR Academy of Educational Sciences Press, 1962, p. 69-74.

Physical education, forming and perfecting the basic motor habits of the students, creates the basis for the successful achievement of productive learning. Physical education facilitates improved operation of the cardiovascular system, deepens breathing, and makes the student more sturdy and stable. In order for this to take place, the physical deficiencies of the Ss must be considered when planning the exercises they are to perform. MRs must be repeatedly told to breathe while doing their exercises. To evaluate progress, the physical education teacher and a psychoneurologist simultaneously should observe the Ss. (6 refs.) - *R. K. Butler.*

1257 KIPHARD, ERNST; & HUPPERTZ, HUBERT. Uebungsanregungen fuer die elementare Leibeserziehung (Suggested exercises for elementary physical education). *Lebenshilfe*, 8(3):131-136, 1969.

Practical exercises are given for the general training of visual perception, special training of form perception and training of acoustical and tactile perception. Visual perceptual exercises include the observation of qualities of physical objects, description of identified objects to promote verbal expression, and the recall and description of objects seen only briefly. Form perception exercises work with the identification and description of objects according to geometric shapes, dimensions, types of angles, and horizontal and vertical placement. Acoustic and tactile training exercises generally begin with the students prone and with eyes closed and proceed to the identification of long and short tones, whispered names, falling and rolling objects, objects striking each other, the direction from which sounds originate, and various finding and orientation exercises with sandbags. (1 ref.) - *S. P. Glinsky, Jr.*

No address

1258 U. S. OFFICE OF EDUCATION. *Directory of Programs for the Education of Handicapped Children in the U. S. Office of Education.* (Bureau of Education for the Handicapped.) Washington, D. C., Health, Education, and Welfare Department, 1969, 79 p.

The Directory identifies the purposes, responsibilities, and coordinating programs for the education of mentally and physically handicapped children and renders a detailed explanation of how they are administered. It describes their size and scope and helps to interpret those Federal programs which are interdisciplinary, interagency coordinated and those that may be or have potential to be multi-funding at the State and local levels. The Bureau of Education for the Handicapped is responsible for programs in the fields of training professional staff, research, demonstration, special academic services and vocational training programs designed to enhance the improvement of education for all handicapped youth. The prime goal of education of the handicapped is a comprehensive service approach including educational diagnostic services, instructional aids, materials, textbooks, media, library books, counseling, classroom instruction, social and health services, parent education, supervision, and teacher training. Summary charts are included in the Appendix that describe the capabilities of the various Office of Education Programs and indicate the extent of their beneficial usage. It further gives information that serves as a guide and index to further program planners interested in new programs, coordinating activities, and services for the handicapped. (No refs.) - *S. Half.*

1259 ENGLAND. EDUCATION AND SCIENCE DEPARTMENT. *List of Special Schools for Handicapped Pupils in England and Wales*. London, England, Her Majesty's Stationery Office. (Available from British Information Services, New York, New York.) 1969, 88 p. $3.00.

All special day and boarding schools and homes approved by the Secretary of State for Education and Science are arranged according to the handicap served and are listed under the county in which they are located. Independent schools are not listed. Listed under the facilities for the educationally subnormal pupils are 134 boarding schools, 370 day schools, and 3 boarding homes. Schools and homes are also listed for the blind, partially sighted, deaf and partially hearing, epileptic, maladjusted, delicate and physically handicapped, special defects, and multihandicapped. (No refs.) - *A. Huffer*.

TREATMENT AND TRAINING ASPECTS--PSYCHO-SOCIAL

1260 VALETT, ROBERT E. *Modifying Children's Behavior: A Guide for Parents and Professionals*. Palo Alto, California, Fearon Publishers, 1969, 66 p. $2.75.

Because all parents can change ttheir children's behavior, this book is presented to enable a concerned parent to define and cope with family problems. Nine major "programs" are divided into 28 lessons and 158 problems to aid parents in improving the behavior of their children. Answers to each of the problems, intended to stimulate reader response and reflection, are presented at the end of each lesson; lessons are sequential and are written to reinforce previous learning. Four suggested applications of the programs are: self-instruction (parents may use the material in the modification of children's behavior); parent counseling (psychologists or other professionals can administer the programs; parent education (the programs can form the core of a workshop); and teacher in-service training (for use both with parents and in the classroon). Forms for parent use, suggested audiovisual aids, and recommended materials for parent education are included. (13-item bibliog.) - *D. F. McGrevy*.

CONTENTS: How Behavior Develops; Parental Needs and Demands; Establishing Behavioral Objectives; How Parents Can Teach Desirable Behavior; How Undesirable Behavior is Learned; Getting Ready to Change Behavior; Systems for Reinforcing Desirable Behavior; Managing Behavior Problems; The Happy Family.

1261 McCLAIN, WILLIAM A. The modification of aggressive classroom behavior through reinforcement, inhibition and relationship therapy. *Training School Bulletin*, 65(4):122-125, 1969.

The maladaptive classroom behavior of a 10-year-old, fourth grade EMR boy was eliminated through the application of a token system administered by the teacher. Three specific behaviors were isolated: walking around the room without permission, fighting, and speaking out without raising the hand. The S earned a gold star for each day without exhibiting these behaviors. Five consecutive gold stars earned a movie pass, and 20 consecutive stars earned a model from a hobby shop. By the seventh week, the maladaptive behaviors were almost eliminated and remained at a low frequency for the next 15 weeks. (No refs.) - *J. M. Gardner*.

Bristol Borough School District
Bristol, Pennsylvania 19007

1262 HIMELSTEIN, PHILIP. The use of behavior modification procedures in MR classes. *Journal for Special Educator's of the Mentally Retarded*, 4(1):68-71, 1969.

Behavior modification (an attempt to apply learning principles developed in the laboratory to human problems) is based in large

part on 3 ideas in operant conditioning theory: behavior is furthered by reinforcement (any event which follows a response that will increase the likelihood that the response will be repeated); behavior is weakened by non-reinforcement; and punishment does not control behavior very well. The 2 basic problems in child behavior faced by parent and teacher are the development of desirable behavior and the discouragement of undesirable behavior. Desirable behavior can be developed by behavior shaping (waiting for the first response that approximates desired behavior and reinforcing it immediately, reinforcing the response several times, then reinforcing the next approximation), by use of the most preferred behavior to reinforce less preferred behavior, and by use of token rewards. Undesirable behavior can be discouraged by carefully avoiding any reinforcement of such behavior. Parents and teachers are cautioned against expecting too much of behavior modification techniques. (4 refs.) - *M. D. Nutt.*

University of Texas
El Paso, Texas

1263 CROSSON, JAMES E. A strategy for multidisciplinary research on behavioral ecology of the mentally retarded. In: Ayers, George, ed. *Program Developments in Mental Retardation and Vocational Rehabilitation* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968). p. 6-9.

The general research strategy adopted by the Oregon Research and Training Center focuses on facilitating the social and vocational adjustment of MR youth. Observational and experimental techniques systematically identify relevant environmental and behavioral parameters as variables mediating the maintenance of MRs in target environments. Output from the observational and experimental activities is data processed. The data are reduced and information is analyzed, assimilated, and extended to natural environmental situations. Research-produced information is sent (in the form of applicative methods) to workers in the field of MR. As more data become available, critical relations between behavior and environment can be defined. A program of applicative research will then become oriented to the development of specific rehabilitation procedures, facilitating the MR's acquisition of specific behavior for specific environmental demands. (No refs.) - *C. L. Pranitch.*

1264 TYMCHUK, ALEXANDER J. A description and preliminary results of a token economy with mildly and moderately retarded adolescent boys. Nashville, Tennessee, Institute on Mental Retardation and Intellectual Development. Volume 7, Number 2, 1970, 60 p.

The use of operant conditioning to improve the social behavior of MRs was successful on 17 moderately MR boys (CA 12-18 yrs). Each boy was rated on 5 scales (each dealing with a different type of behavior), and trained aides were used as raters. Tokens, equivalent to the value of United States coins, were used as rewards. Each week, the boys were rotated through a series of jobs and were paid for good performance. In addition, tokens were paid for good behavior in dressing, washing, etc., and fines were charged for bad behavior. All rewards (meals, candy, TV, visits home) cost tokens. After comparing pretest ratings with ratings after 4 months of this reward environment, it was found that all ratings improved for all MRs, and those MRs who were originally rated lowest showed the greatest improvement on posttests. Interobserver reliability was .61. Rapid loss of good behavior occurred during holidays at home, when the reward structure was not in effect. (28 refs.) - *K. H. Vogt.*

1265 BRIERTON, GARY; GARMS, ROGER; & METZGER, ROLLAND. Practical problems encountered in an aide-administered token reward cottage program. *Mental Retardation/MR*, 7(3): 40-43, 1969.

A ward token project is described. Problems encountered in administration are presented along with suggestions to solve or minimize these problems. The results demonstrate how non-professional personnel can effectively participate in the therapeutic process of improving the behavior of residents. (4 refs.) *Journal abstract.*

Dixon State School
Dixon, Illinois 61021

1266 BUDDENHAGEN, R. G.; & SICKLER, PATRICIA. Hyperactivity: A forty-eight hour sample plus a note on etiology. *American Journal of Mental Deficiency*, 73(4):580-589, 1969.

There is no agreement as to what constitutes "hyperactive" behavior in a child, but it probably describes that behavior which annoys the observer. A 48-hour sample of behavior

of a 13-year-old mongoloid girl who had been institutionalized for 9 years revealed that her "hyperactivity" appeared to be in response to punishment received from other girls in her cottage and also served to get individual attention from the aide. It may be valuable to focus on the responses of personnel to annoying behavior because it might be more effective to reinforce more productive and desirable acts with attention. Although "hyperactivity" may be controlled by seclusion, "emotional states" (fear of punishment), and to a lesser extent, drugs, it would be most valuable to focus on the institutional system which denies adult attention to the retardate. (14 refs.) - *E. L. Rowan.*

Gottsche Rehabilitation Center
Thermopolis, Wyoming 82443

1267 COYTE, MARION J. A real "love-in": Foster grandparents and the retarded. *Welfare Reporter*, 20(3):29-33, 1969.

In a national survey on the effectiveness of foster grandparent programs, it was found that 52% of the MR children in the program benefitted emotionally, 56% benefitted socially, 38% physically, and 38% gained in mobility and self-help skills. In addition, the senior citizens in the programs added to their income; they gained a feeling of being needed and of participating in a useful activity. Since institutions for the MR are usually understaffed and the residents are somewhat isolated, foster grandparents provide the individual play and attention which staff attendants cannot. In these programs, the foster grandparents are not expected to assume educational nor physical responsibilities. Senior citizens who wish to participate should be able to spend 4 hours/day in the program, they should speak English, and they should be physically strong enough to cope with the MR child. However, handicapped elderly persons could work with docile or bedridden MRs, and such persons should not be discouraged from serving as foster grandparents. (No refs.) - *M. D. Nutt.*

North Jersey Training School
Totowa, New Jersey 07511

1268 ENGLEMANN, WOLF. Lockerung und Straffung bei geistig behinderten Kindern (Personality freedom and control in MR children). *Lebenshilfe*, 8(3):137-143, 1969.

Exercises are given to achieve balance in the character of MRs with either too little or too much personality control. Both tendencies are character deficiencies which lead either to diminished exertion and atrophy of existing abilities or to lack of confidence, inhibitions, and general anxiety. Exercises should be aimed at these deficiencies and not at set performance levels. Exercises which promote control of personality include all ordering and dividing tasks, tidying-up, skill games, constructive building, number and counting games, group games with definite rules, and differentiation and symmetry exercises. Exercises which increase personal freedom are free-painting and drawing, finger painting, free play without set rules, activivities reflecting disorder such as tearing paper and overturning blocks, and free movement to music. Mixed forms of personality with needs for both control and freedom are best assisted through dancing with set and free movements, music playing, non-dancing movement to music and hand-clapping games. (1 ref.) - *S. P. Glinsky, Jr.*

No address

1269 ROSEN, HOWARD G.; & ROSEN, SUSAN. Group therapy as an instrument to develop a concept of self-worth in the adolescent and young adult mentally retarded. *Mental Retardation/MR*, 7(5):52-55, 1969.

A group therapy approach to help MR youth in their effort to cope with community life appears to be successful with MRs who have sufficient job skills (but who are unable to manage many aspects of community life), with MRs who need a gradual transition to independent living, and with MRs whose personal adjustment problems could be more adequately treated in small groups. Such a program with 27 enrollees was initiated in a private institution in Colorado; the MRs are located in 2 houses within a community housing project. This group living arrangement provides the trainees with peer relationships, a more normal community setting, and an opportunity to rent low-cost housing after graduation. In addition, the housing project has a number of built-in services (a public health nurse, a welfare worker, and the close proximity of the training staff). The group therapy sessions provide support for individual MRs to acquire new, community-oriented life styles; it serves to increase and sustain the motivations of the residents, and it provides a forum for reality testing. In addition, group pressure can facilitate the adoption of new values and attitudes compatible with a wider society. Role playing in the group can reduce anxiety in a new situation, and remedial training should relate to job and community

demands. Group discussions are useful in bringing out problems individual members have encountered. (11 refs.) - *M. D. Nutt.*

United States Department of Health,
Education, and Welfare Region VIII
Denver, Colorado

1270 MENOLASCINO, FRANK J. Emotional disturbances in mentally retarded children. *American Journal of Psychiatry*, 126(2):168-176, 1969.

The MR child also may have a personality disorder; therefore, multiple handicaps must be recognized, and the desire for a singular diagnostic-treatment approach avoided. Among 256 emotionally disturbed, MR children were 177 with chronic brain syndromes and behavioral and/or psychotic reactions, 8 MRs with functional psychoses, 58 with MR and adjustment reactions of childhood, and 15 with MR and unspecified psychiatric disturbances. The multidisciplinary team approach attempts to delineate behavioral patterns secondary to cerebral insults, the role of superimposed interpersonal conflicts, and instances with many variables. No single approach is used, but an individualized program which may include play therapy, medication, family counseling, nursery school, correction of somatic handicaps, and community services is developed. Parents are made to play an integral part in planning, so that optimal personality changes can be made despite limited intellectual potential. (17 refs.) - *E. L. Rowan.*

University of Nebraska College of Medicine
Omaha, Nebraska 68105

1271 MORGAN, JUNE E. Working with autistic children. *Intellectually Handicapped Child*, 8(4):13-14, 1969.

Braemar Psychopaedic Hospital (New Zealand) operates a short stay hospital and day care center for autistic children suffering from psychoneurotic disturbances, brain damage, and undifferentiated psychoses. The children receive a great amount of attention from staff members, and the immediate objective is to ameliorate the anxiety and distress experienced by children and parents. The child is closely observed and his patterns of activity, mobility, and play are recorded. In therapy, the child's own particular perseveration patterns are used to promote more purposeful activity. Since each autistic child is entirely different, no single technique is used in treatment. Nevertheless, the technique of beginning with an activity that is familiar to the child and very gradually altering the pattern by extending it has been more successful than trying to "break through" an established pattern. (No refs.)
C. L. Pranitch.

Braemar Hospital
Nelson, New Zealand

1272 MILLER, NANDEEN. Language therapy with an autistic nonverbal boy. *Exceptional Children*, 35(7):555-557, 1969.

A one-year program with a nonverbal, autistic 9-year-old boy involved the exploration of his perceptual skills, his capacity for learning language skills, and the development of patterns for impulse control; however, the program failed to produce integrated visual and auditory perception skills or meaningful spontaneous speech. Language training did enhance his impulse control and frustration tolerance. Word-recognition training was carried out by matching (his) printed words with pictured objects until the words could be printed from memory. Combined auditory and visual stimuli were paired until the S reacted to the auditory stimuli alone. Repetition set up strong compulsive rituals, and persistent interference by the therapist resulted in tantrums of a sometimes violent nature with an eventual decrease in the rituals. Nine months of speech therapy coincided with reading therapy, and focused on naming letters of the alphabet and their sounds. Physical responses to the learning of words were quickly ritualized and could not be separated from the words without tantrums. Both oral and written language development took the form of rote learning. (No refs.)
D. F. McGrevy.

University of Michigan
Ann Arbor, Michigan 48104

1273 PARK, CLARA CLAIBORNE. *The Siege*. Gerrards Cross, England, Colin Smythe, 1968, 280 p. $5.04.

Family efforts to enhance the development of an autistic daughter are described. The parents began to realize that the child's development was not normal during the second half of her second year of life. Although she evidenced retarded development and appeared SMR and withdrawn, she exhibited strange flashes of intelligence. The parents decided to combat this child's self-imposed isolation,

and their efforts to establish communication with her and to increase her awareness of and participation in her world are outlined. Professional help was obtained from several different sources, and parent reactions to it are included. The girl is now 8 years of age and attends an EMR class. Although she no longer ignores other human beings, she continues to avoid self-initiated activities and exhibits mental, emotional, and physical inertia. Her capacities for the expression of and for understanding and sustaining exploratory behavior appear to be impaired, and she is not interested in future experiences. This book would be of interest to parents of autistic children, pediatricians, psychiatrists, psychologists, and educators. (13 refs.) *J. K. Wyatt.*

CONTENTS: The Changeling; Ourselves; Doctors and Diagnoses; Willed Weakness; Willed Blindness; Willed Deafness; Willed Isolation; In the Family; The Professionals; To Retrieve the Past; Professionals as Human Beings; The Amateurs; Towards Speech: A Long, Slow Chapter; Ideas of Order; Now and Later; The Others.

TREATMENT AND TRAINING ASPECTS--OCCUPATIONAL

1274 THE PRESIDENT'S COMMITTEE ON MENTAL RETARDATION; & THE PRESIDENT'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED. *These, too, Must Be Equal: America's Needs in Habilitation and Employment of the Mentally Retarded.* Washington, D. C., 1969, 22 p.

The MR are demonstrating that they not only can help themselves, but they can work and, in some jobs, perform better than non-retarded. Rehabilitation specialists and forward-looking employers are carving broader job opportunities for the MR, and this team is helping to bring to MRs the goals of successful vocational rehabilitation--a job, independence, an opportunity to enjoy happiness and life's fulfillment. This document highlights directions the United States should follow in providing equal citizenship to the MR by means of appropriate education, training, rehabilitation, and employment. The National Association for Retarded Children, President's Committee on MR, and the President's Committee on Employment of the Handicapped are putting forth maximum effort to make employers aware of the MR as a valuable manpower resource. National action to meet the needs of the MR has been called for, and 39 specific proposals for action are outlined. This document is augmented by facts about the MR and program and information sources. (No refs.) *S. Half.*

1275 THE PRESIDENT'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED. Nine Years of Progress: Employment of the Mentally Retarded and Mentally Restored 1961-1970. Washington, D. C., 1970, 7 p. (Mimeographed).

The highlights of 9 years of promoting employment for the MR include the fact that 93% of the more than 6,000 MR men and women hired by the Federal Government have been successful in their jobs even though 2/3 of them had not been previously employed. In addition, 12 state governments have placement services for the MR, an awards program for firms who hire the MR has been instituted, projects which train the MR in service occupations have been organized, and publications which stress the employability of the MR have been distributed. (No refs.) - *K. Lee.*

1276 GREENSTEIN, MELVIN; & FANGMAN, THOMAS J. Vocational training for the mentally retarded in a metropolitan setting. *Focus on Exceptional Children*, 1(5):1-6, 1969.

The Kennedy Job Training Center, which seeks to evaluate the MR's potential for work in a workshop situation, provides the handicapped with evaluation, training, and employment. In addition, for those who can not compete in

the labor market, the Center provides remunerative employment for an indefinite period of time. Evaluation is based on performance in a sheltered workshop rather than on IQ tests or previous school performance, and the environment is manipulated to test potentials. "Habilitation" team members (counselor, social worker, psychologist, production supervisor, and teacher) observe, compile background data, counsel the family, prescribe therapy, and diagnose with an emphasis on the MR developing a good self-image. Evaluation takes 6 weeks and consists of: an initial interview to determine the MR's attitudes and perceptions; orientation into the workshop with its 6-level pay incentive system; staff evaluation of performance, interpersonal relations, and attitudes; and a plan for training with continual re-evaluation. (4 refs.) *M. Plessinger.*

Kennedy Job Training Center
Palos Park, Illinois 60464

1277 CHAFFIN, JERRY D. Production rate as a variable in the job success or failure of educable mentally retarded adolescents. *Exceptional Children*, 35(7):533-538, 1969.

The purpose of this investigation was to study the production rate and its influence on an employer's judgment regarding the success or failure of MR adolescent workers. All students enrolled in the Kansas Special Education and Vocational Rehabilitation Project were considered as Ss. Of the 58 students enrolled, 35 were classified as "probably successful" and 23 as "probably unsuccessful." Ten pairs, each pair consisting of 1 successful and 1 unsuccessful student with matching IQ scores and chronological ages were selected for the first work experiment. Each pair worked at the same job in the same environment 2 hours daily for 2 weeks. The daily production rate of each was computed, and it was shown that, in every case, the S judged successful by his employer had a higher production rate than the unsuccessful member of the pair. Experiment II utilized 4 successful and 4 unsuccessful workers randomly selected from Experiment I. Modifying procedures were employed to increase the production rate of unsuccessful Ss and decrease the rate of successful Ss to that of previously unsuccessful Ss. The results showed that the previously successful Ss, because of their lower rate of production, were now judged unsuccessful. This suggests that production rate is a very important factor in the success or failure of MR workers. Checks regarding the difference between the client's actual performance and his required performance will provide the structure for instrumenting modification procedures. (7 refs.) *Barbara Parker.*

University of Kansas
Lawrence, Kansas 66044

1278 NEAL, W. R., JR. Articulatory deviation and employability of the adolescent educable mentally retarded. *Exceptional Children*, 35(7):561-562, 1969.

Twenty-six EMR adolescents with varying degrees of articulatory deviations were evaluated in terms of their probable employability. Fifty percent was judged to be employable. Speech adequacy was not included among the factors related to employability. Further investigation is needed to determine whether the communicative demands of various occupations are flexible enough to accommodate the communicative skill levels of the MR. (6 refs.) - *Barbara Parker.*

University of Georgia
Athens, Georgia 30601

1279 AYERS, GEORGE E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation.* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 12-17, 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, 32 p.

These proceedings focused upon program development, research, and training personnel in vocational rehabilitation of the MR. Included are 6 papers covering recent developments in training counselors for the provision of vocational rehabilitation services, cooperative educational planning for vocational training of the MR, and programing for their vocational success. (No refs.) - *C. L. Pranitch.*

CONTENTS: The Mental Retardation Training Institute (Baroff); Utilization of the Rehabilitation Counselor Intern with Potential High School Dropouts (Vliet); Cooperative In-School Rehabilitation Programs--An Overview (Shay); Food Service Training in an Institutional Setting--Behavior vs. Learning (Hinojosa); Training Power: Old and New Approaches to Manpower Development (Jaffe & Jaffe); Project Workout: An experimental Approach in Training the Mildly Retarded as Institutional Attendants (Orr & Snyder).

1280 BAROFF, GEORGE S. The mental retardation training institute. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 1-6.

One of the programs offered by the MR Training Institute (MRTI) is a single discipline course for rehabilitation counselors, special education teachers, social workers, and others involved in rehabilitation of MRs. The course is divided into 3 parts, each 2 weeks in length. Part I focuses on the nature and causes of MR, the impact on the family, educational services, vocational potential, evaluation, training, job placement, follow-up, and a project to be carried on during the 6-month interval between courses. Part II, in addition to a practicum in evaluation, contains units on Piaget's theory, motivation, counseling, and sheltered workshops. Part III deals with poverty and MR, progress reports, counseling, facility visits, sheltered workshops, and federal employment of MRs. Trainees are evaluated at the end of the first part to assess their basic knowledge about MR. Six graduate credits are awarded to trainees successfully completing the course. (No refs.) - *C. L. Pranitch*.

1281 VLIET, JACK VAN. Utilization of the rehabilitation counselor intern with potential high school dropouts. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 7-11.

The Devereux Foundation introduced a new intern program emphasizing the training of rehabilitation counselors to do dropout prevention work. Interns were placed in a local school district to work with seniors who were known to have unresolved vocational problems. Group and individual counseling case loads were established to evaluate effectiveness of both approaches. Field trips were made to such places as the employment office, local places of employment, and military recruiting offices. The students were assisted in helping themselves plan their vocational future. All seniors receiving counseling remained in school and graduated. The only criticism of the program by the students was that it should have started earlier in their high school years. The interns, who primarily receive training with emotionally disturbed and MR, obtained an awareness of the value of preventive rehabilitation counseling. (2 refs.) *C. L. Pranitch*.

1282 SHAY, HAROLD F. Cooperative in-school rehabilitation programs--An overview. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 12-18.

In-school rehabilitation programs are generally based on the premises that handicapped adolescents need to be retained in school and provided with special experiences that will prepare them for success in the work world and the curriculum should integrate academic studies with on-the-job training. The emphasis of the academic program is on practical learning, with the school providing instruction, library services, health and physical education, and vocational training, such as manual arts and homemaking. Diagnostic services, medical restoration, rehabilitation counseling, training, job placement, and follow-up are provided by the vocational rehabilitation agency. Follow-up studies revealed that handicapped adolescents in these rehabilitation programs tend to remain in school longer, and there has been a significant increase in job placement by rehabilitation agencies. (No refs.) - *C. L. Pranitch*.

1283 HINOJOSA, EDUARDO. Food service training in an institutional setting: Behavior versus learning. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 19-23.

A pilot program to train 58 Austin State School residents (CA 17-46 yrs) in the art of food service consisted of 160 hours of combined classroom and on-the-job training. The curriculum included ware-wash training, sanitation, safety, bussing tables, and development of proper social behavior. Classroom instruction utilized discussion and films.

On-the-job training was conducted in the state school dining room facility. Of the 58 trainees, 42 (including 7 TMRs) are now employed. Analysis of Adaptive Behavior Scales which had been administered to 38 trainees revealed that between factors contributing to success or failure, language development, number concepts, occupation, self-direction, responsibility, socialization, rebelliousness, and trustworthiness most clearly distinguished between success and failure. (No refs.) *C. L. Pranitch.*

1284 ORR, KATHLEEN V.; & SNYDER, HARVEY J. Project work-out: An experimental approach in training the mildly retarded as institutional attendants. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation.* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 28-32.

Project workout was designed to train 75 community-based EMRs for employment at the Woodbridge State School. Trainees received 8 months of instruction in housekeeping and resident care. A total of 80 skills, developmentally outlined, needed to be mastered before trainees could be employed as institutional attendants, custodians, or nurse's aides. All trainees had to master housekeeping skills, such as mopping floors and using heavy cleaning equipment, prior to training in resident care. Resident care training utilized discussions and audio visual aides to minimize reading and writing difficulties. Thirty graduates are now employed in the position of Institutional Attendant with a starting salary of $4,500. (No refs.) - *C. L. Pranitch.*

1285 FERGUSON, ROBERT G. The marginally competitively employable. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation.* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 54-64.

The Vocational Capacity Scale, representing physical, mental, social, emotional, and vocational areas, evaluates and predicts vocational success in the marginally employable worker. Of the 8 subtests in the scale, the 2 having the greatest weight were those measuring motivation (Disc Assembly) and ability to follow directions (Wells Concrete Directions Test). The Disc Assembly Test requires the S to assemble bolts, washers, and nuts for 1 hour without interruption. The Wells Concrete Directions Test consists of 12 verbally administered directions which instruct the S to move common household items left, right, near, or far. Reports indicate that the Wells Concrete Directions Test has a very high predictability for selecting potentially competitive employees from sheltered workshop operations. (3 refs.) - *C. L. Pranitch.*

1286 Services, Incorporated. Out-plant supervised janitorial service employing the mentally retarded. Erickson, Walfred. Bellevue, Washington, (Project Number RD-1604-P-66-C1). 1967, 53 p.

A program combining classroom and on-the-job training was designed to provide skills and subsequent employment in janitorial maintenance for MRs to the extent that job productivity offset their wages and supervision. Nineteen Caucasian males, ages 17-40 years and classified from "normal" to "severe retardation" on the Weschler Adult Intelligence Scale, completed approximately 180 hours of training in the various aspects of janitorial duties. Due to lack of retention on the part of the students, repetition and review became an integral part of the curriculum. After completing the course, most of the students continued working in the workshop, although they eventually left the workshop for outside employment. Motivation was as much a problem as low intelligence; however, for most employees, their first paycheck provided adequate incentive. Pay was based on productivity, a concept which the workers appeared to understand. It was found that MRs can be trained to be capable of performing at least 50% of the normal journeyman's productivity. (No refs.) - *K. H. Vogt.*

1287 NELSON, NATHAN. The planning for workshops for the handicapped. *Rehabilitation Literature*, 30(3):71-73, 80, 1969.

Planning of the workshop should begin with a written plan indicating the nature and characteristics of the program and spelling out its specific objectives and projected future course of action by stated time sequences. It should analyze the needs of the handicapped, estimate the number of people and their disabilities, and indicate the geographic region which will be served. The plan should also include a statement of expenditures necessary

to fund the program and a report on where these funds may be obtained. Specific policies, administrative organization, and services that will be provided should be detailed in the plan. Thorough planning will aid the organization in securing support from public and private agencies as well as from local funding organizations. (11 refs.) *Barbara Parker.*

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1288 BERG, ELITH. Workshop Activities for the Mentally Retarded in Denmark. Copenhagen, Denmark, Danish National Service for the Mentally Retarded (Statens Andssvageforsorg), October, 1969, 11 p. Mimeographed.

The report on 57 Danish MR workshops examines the organization of groups within the workshops, the size of the groups, the character of the work, and the number of personnel working with the groups. Thirty-nine workshops were nonresidential with an average number of 46 workers; 18 were institutional with an average number of 86 workers. Together, the 57 workshops served 3,347 clients or 15% of the total MR clientele (22,000) registered with the service. MRs over 20 years of age comprise 28% of the workshop population. Workshop activities consist of training for outside employment, motor and perceptual training, and sheltered employment (assembly work, manual and machine sewing, wood and metal industry with assembly work accounting for nearly 50% of the work). The number of workshop personnel is 344 or an average of 1 employee per 9.7 workers. Twenty-eight percent of the clients discharged from the workshops have employment in normal working places and 1/2 of them receive normal salaries. (No refs.) - *C. L. Pranitch.*

1289 ZIMMERMAN, JOSEPH; OVERPECK, CAROLE; EISENBERG, HEIDI; & GARLICK, BETSY. Operant conditioning in a sheltered workshop: Further data in support of an objective and systematic approach to rehabilitation. *Rehabilitation Literature*, 30(11):326-334, 1969.

Operant conditioning has increased the work productivity of MRs in a sheltered workshop situation while at the same time providing researchers with an objective measure on which to base decisions with respect to the disposition of individual cases. Thirteen male and female Ss, who had a poor prognosis for productive employment and at least 2 other major handicaps, were observed over a period of time (approximately 2 weeks to 3 months) to establish a baseline productivity rate on a particular job (folding bags or working a terminal board). Daily rates were quite variable. Each S was informed that, if he produced an amount equal to the baseline rate, he would be allowed to continue to work at a table with other trainees, but if he failed, he would be isolated for one day. Under this isolation-avoidance procedure, work rates increased markedly. When the criterion was raised, output showed a corresponding increase. Applying only a goal setting criterion was not as effective, for when the Ss were told to produce a minimum output without mention of isolation, the criterion was not regularly met. When avoidance procedures were instituted, output increased. When token reinforcement occurred, output increased when rewards were present but decreased when they were removed. The advantages of the isolation-avoidance technique are the permanency of increased output over sustained time periods, the realistic nature of the approach in that employers expect a minimum standard of output, and the opportunity for MRs to approach maximum potential and subsequently increase their self-concept. The technique should be viewed not only as an approach to increase productivity but also as an objective measurement tool. (4 refs.) *K. H. Vogt.*

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1290 OLSHANSKY, SIMON. Behavior modification in a workshop. *Rehabilitation Literature*, 30(9):263-268, 1969.

Since man is not an animal, changing behavior by force is unethical and should be rejected. "Change of behavior should come only when a person wants to change his behavior" is a more ethical approach. In terms of the theory of therapeutic milieu, change is effected by indirection--the creating and maintaining of an atmosphere which gives each person an increased sense of worth and confidence in himself. In a workshop situation, a client will want to change himself if he has self-respect acquired because he makes decisions and works as an adult, the workshop staff expects normal behavior from him, and he has opportunities to overcome early self-misconceptions. Length of stay should not be predetermined, and referral time should be studied carefully. Punishment for rule violations should depend on the frequency, the client, how long he has been there, and his age. Workshops should be independent of clinics and oriented around the role of the worker, and they should be behavior-oriented to understand the individual in relation to

his behavior. Fear of failure must be overcome with simple tasks and continued success. Factors which the workshop can not control include temporary lack of interesting tasks, changes in shop tension level, rapport between staff and workers, previous experiences of MR, family interference, and society's attitudes. (22 refs.) - *M. Plessinger.*

Community Workshops
Boston, Massachusetts

1291 KOKASKA, CHARLES J. The occupational status of the educable mentally retarded: A review of follow-up studies. *Journal of Special Education*, 2(4):369-377, 1968.

Numerous omissions, inconsistencies, and instances of unverified data in research literature regarding the social and occupational success of EMRs who had attended public school special school programs indicate limited knowledge about the work capabilities of the MR. There is little knowledge to provide a basis for comparison among the various special education programs in large urban centers. Previous studies are inadequate for shaping future vocational situations. With the proper educational background and vocational training, the MRs are capable of moving through a number of work situations and, in many cases, increasing their work skills. Denied education and training, the MRs are likely to be placed in service areas by federally-supported placement and rehabilitation agencies where criteria are based on time and money. The MRs' basic abilities must be developed as early in life as possible to allow them to enter a labor market that requires flexible, adaptable, and marketable skills. (19 refs.) - *D. F. McGrevy.*

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1292 RUSALEM, HERBERT; & BAXT, ROLAND. *Delivering Rehabilitation Services.* (National Citizens Conference on Rehabilitation of the Disabled and Disadvantaged.) Washington, D. C. Superintendent of Documents, U. S. Government Printing Office, 1969, 73 p. $0.40.

Rehabilitation service delivery should be decentralized and returned to the people through procedures that guarantee professional freedom and the overall participation of everyone concerned. The concept of catchment area is a step in this direction. In describing and discussing rehabilitation service delivery, environmental and attitudinal types of barriers must be considered. Planning, implementation, and evaluation tools must be utilized to meet the special needs of the handicapped individual. Appropriate services should be available to all eligible persons under vocational rehabilitation legislation; service must be provided to clients for whom vocational adjustment is not the main objective; when he needs them, the client should be provided with appropriate services and programs in the proper order, amount, and quality. Improved delivery of services is needed to bring about a more functional relationship between potential clients and waiting services. A well-structured and satisfactory rehabilitation service delivery system should utilize a combination of the current delivery systems. Rehabilitation in the United States has made considerable progress toward improved service delivery systems, but many unresolved problems remain; it is pertinent that the service deliverers implement the systems properly and appropriately. The service delivery mechanisms must contain a built-in responsiveness to change and a concept of self-renewal. Recommendations, suggestions and proposals are rendered to improve the methods, skills, techniques, knowledge, and handling of the rehabilitation delivery service system on the local community-based level. (374 refs.) - *S. Half.*

CONTENTS: Current Delivery Problems; Current Delivery Systems; Attributes of a Satisfactory System; Human and Attitudinal Barriers; A Philosophical Substructure.

1293 OVERS, ROBERT P.; HOLMES, ELIZABETH; & McFATRIDGE, DIANE. *Paid Domestic Work for the Trainable Retarded Girl: A Pilot Project.* Milwaukee, Wisconsin, Curative Workshop of Milwaukee, 1970, p. 105. $2.00.

To determine whether or not employment in domestic work is feasible when specialized training and selected placement is provided, 4 TMR adolescent girls were placed in 4 households for training in domestic skills. The girls, selected from 2 Milwaukee public schools for TMRs, received 3 weeks part-time training in 12 household tasks. The tasks, which included vacuuming, dusting, washing dishes, and bed making were broken down into component parts. When a girl accomplished one task, the housewife, who had been instructed in training principles, would introduce a new one and review the old. A review of all skills was conducted during the last week of training. The housewives motivated the girls with a small hourly wage, food, drink, and social reinforcement. The

participants indicated satisfaction with the outcome of the training and expressed opinions that eventual employment of the 4 TMR girls in the domestic labor market was possible. (87 refs.; 76-item annotated bibliog.) *C. L. Pranitch.*

1294 ROSENTHAL, M. What an employer expects in preparation of the mentally retarded for employment in open industry. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, New South Wales, Australia, 1969, p. 254-258.

It has been repeatedly demonstrated that the MR can be successfully employed in industry. Companies expect the MR to possess the ability to perform reasonably well on a specific task, be conscientious, exercise self-control, have a good attendance record, be punctual, possess some real understanding of safety rules, and be clean about his person. Prior training and preparation is significant as well as an indication to the employer of the employee's capabilities when referral is made. (No refs.) - *S. Half.*

1295 DICKENS, B. An experiment in personal development and employment of mentally retarded youth in a rural setting--Regionalization of services and total care. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, New South Wales, Australia, 1969, p. 259-266.

The Westhaven Association, a regional center, in cooperation with the community-at-large, demonstrated that MR youth can achieve in personal development and employment. The philosophy is to provide total care for life for the MR by making available a continuum of services to meet the special needs of the retardates and their families. The program of regionalization of services revealed that the centers should be designed to cope with educational facilities, residential accommodations, sheltered workshops, and sheltered farm facilities. Follow-up periodically by a visiting team from the diagnostic center is a necessary and beneficial procedure. Regionalization of programs demands the services of a full-time social worker for the management of many problem areas encountered by the MR and for the integration of the organizations in the community. (No refs.) - *S. Half.*

1296 CARUTH MEMORIAL REHABILITATION CENTER. Work Adjustment Training for Mentally Retarded Young People in a Community Setting: Final Report. Diana, Pearl B., Dallas, Texas, May 1969, 24 p. Mimeographed. (Project Number RD-2101-G-D-68-C2.)

A 3-year demonstration project designed to provide work adjustment training for the MR out of school was accepted by the community, and efforts were made to expand the program. Of the 110 MRs who spent a mean of 9.1 months in the project, 84 have been terminated. At the end of 3 years, 38 of the 76 MRs who were contacted were regular full-time employees. The ages ranged from 15-39 (mean 18.6) years and the mean IQ was 60.2. Many had multiple handicaps including hemiparesis, cerebral palsy, and emotional problems. Although there was a positive relationship between IQ level and employability, test scores could not predict reliably eventual employability, (no MR with an IQ <40 was able to be trained and placed on a job). Emotional disturbances in the MR were more easily overcome than severe physical handicaps. The effect of parental attitudes on placement potential requires research. Better job descriptions from within the community can supply possible placement opportunities in competitive employment, which is as sheltered, and often more so, as the present sheltered workshop. (No refs.) - *D. F. McGrevy.*

1297 MILLS, MILLIE. The adolescent retarded and his family. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, New South Wales, Australia, 1969, p. 267-272.

When MR youth become partially economically independent or, in some cases, sustain themselves completely, conflicts with their parents tend to be alleviated. MRs should be permitted to become consumers, allowed freedom of choice, and be able to spend their own money. They should form heterosexual, meaningful, and wholesome interpersonal relationships, develop a philosophy of life, and find a compatible place in the family unit. The parents, siblings, and the MR individual can often benefit and profit from skilled and appropriate counseling services. Psychiatric supervision should be made available to the

retardate and his family, and public education is essential if the MR adolescent is to be accepted with complete understanding in the community. (5 refs.) - *S. Half.*

1298 EDUCATION FOR THE HANDICAPPED BUREAU. *Abstracts from Approved Projects with Emphasis on Vocational Education for the Handicapped: Fiscal Year 1968.* Washington, D. C., U. S. Office of Education, 1969, 23 p.

This document is comprised of abstracts of approved projects for the handicapped and stresses vocational education training programs under Title VI-A (preschool and school programs for the handicapped), P.L. 89-313 Amendment to Title I (state operated and supported schools for handicapped children), Title III (supplementary educational centers and services) and P.L. 88-164, Title III, Section 302, as Amended. The latter authorizes the Commissioner of Education to make grants to and contract with states, state or local educational agencies, public and nonprofit private institutions of higher learning, and other public or nonprofit private educational or research agencies and organizations for research and related programs for the education and rehabilitation of handicapped children. (No refs.) - *S. Half.*

TREATMENT AND TRAINING ASPECTS--THERAPY

1299 FREDERICKS, H. B. BUD. *A Comparison of the Doman-Delacato Method and Behavior Modification Method upon the Coordination of Mongoloids.* (Project Number RD-2753-P-68) Monmouth, Oregon, Oregon State System of Higher Education, 1969. 158 p.

A 9-week study was conducted to determine differences in coordination among 72 Ss with Down's syndrome (CA 7 to 12 yrs) receiving behavior modification procedures, Doman-Delacato treatment, or no treatment. The Ss, sorted by age and sex, were assigned randomly to one of 6 groups (A-E). Groups A (Doman-Delacato), B (behavior modification), and C (control group) were pretested and tested every 2 weeks with the Doman-Delacato Profile. Groups D (Doman-Delacato), E (behavior modification), and F (control) were tested only at the completion of the training. Each group, except C and F, received 5 minute sessions, 4 times daily, 5 days weekly for 9 weeks. Treatment for A and D consisted of patterning (homolateral and cross-patterning) and crawling around the floor and through a crawl box. Behavior modification for groups B and E included string winding, board walking, jumping, and cutting out geometrical designs. Activities were broken down into specific behavioral components, and each S began at the phase which he was unable to perform. Ss were taught the phases in reverse order and were reinforced socially (verbal, hugging, squeezing) at the conclusion of the final step. The Doman-Delacato Profile and a modified version of the Lincoln-Oseretsky Motor Development Scale were used as evaluation instruments. *t*-tests of Lincoln-Oseretsky post test mean scores revealed the behavior modification group scoring significantly higher (.05 level) than the control group. Differences between the Doman-Delacato and behavior modification groups were not significant nor were the differences between the Doman-Delacato and control groups. The same pattern of significant differences was found in follow-up scores (3 months later). (67-item bibliog.) - *C. L. Pranitch.*

1300 HELLER, MAX. Die Mongoloidie in der Geschichte und als hielpadagogische Aufgabe (Mongolism in history and as a medical and educational problem). *Schweizer Erziehungs-Rundschau*, 41(11):297-300, 1969.

Children with Down's syndrome have special problems in the somatic, educational, and emotional realms which must be considered if treatment is to be effective. Because of the chromosome abnormality in each cell, motor development is slow, and there is an increased susceptibility to colds and leukemia. Intellectual capacity is limited; an average mental age for a mongoloid child lies between 2 and 1/2 and 5 and 1/2 years. For those whose IQ is above 25, speech therapy may improve verbal capacities, and music therapy can be of additional value. Although generally of a pleasing personality, the mongoloid

child may exhibit behavior disturbances (extreme nervousness, fighting, and emotional instability). Education and/or training is possible for about 90% of these children and should be undertaken in small groups of 5 to 8 Ss. As much as possible, parents of the mongoloid child should participate in the educational process. (No refs.)
S. L. Hamersley.

No address

1301 ROMER, NANCY E. A comparison of two methods of improving drawing skills among severely retarded adults. *Rehabilitation Counseling Bulletin*, 12(6):238-239, 1969.

Two groups of SMR (CA 15 to 37 yrs) improved significantly (p=.01) in their drawing ability after 10 weeks of training in movement exploration with and without operant conditioning. Psychometric, handedness, and drawing skill tests were administered to 36 Ss randomly assigned to one of 3 groups (control, movement exploration, movement exploration with operant conditioning). Computed *t*-ratios indicated that IQ scores on the Stanford-Binet Intelligence Test increased significantly for the treatment groups (p=.01 for movement exploration with operant conditioning; p=.05 for movement exploration alone). Both movement exploration groups demonstrated significant (p=.01) change in social interaction. (No refs.) - *A. Huffer.*

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1302 MATTIS, STEVEN. An experimental approach to treatment of visually impaired, multihandicapped children. In: Wolf, James M.; & Anderson, Robert M., eds. *The Multiply Handicapped Child*, Springfield, Illinois, Charles C. Thomas, 1969. Chapter 17, p. 219-224.

Based upon the hypothesis that concept deficits are primary disruptive factors in the development of many visually impaired, multihandicapped children, 2 programs were formed to facilitate the child's acquisition of organizing principles with which to comprehend and respond to his environment. The Concept Formation Program focuses on concept development with children who are quite verbal, but who demonstrate specific deficits and are often aphasic and/or moderately retarded. Problem-solving and discrimination tasks are developed to isolate a basic sensory-motor component; the child experiences the component, while the appropriate concomitant verbal label is introduced. Eventually, as sensory-motor cues are diminished, problems are solved using only verbal components. The working hypothesis is that the acquisition of specific concepts is transferable to other situations and will allow the child to cope with previously disruptive events. The Day Treatment Program, with major goals of service research and demonstration of results, serves children who are autistic, schizophrenic, and/or PMR. The objectives are: to develop organizing principles not at the concept level but as a reliable response to a wide range of environmental and internal cues; to facilitate the child's recognition of object constancy or similarities in situations; and to enable communicative verbal labeling of such events. Both programs are predicated on a thorough diagnostic evaluation of each child. (No refs.) - *C. L. Praniteh.*

1303 SHERBORNE, VERONICA. Movement education for Brian. *Special Education*, 58(4):16-18, 1969.

Six sessions of movement education created a growing trust in adults, increased initiative toward external challenge, decreased obsessional movements, and an increased movement vocabulary in a withdrawn MR child. Two students attempted to increase the child's bodily awareness and to create a constructive relationship with him through contact and motion; however, the child remained almost totally unaware of his own body. A small trampoline served as an exercise apparatus, and responses to music and rhythm were developed in dancing sessions. This approach to treatment of MR children holds great promise. (No refs.) - *D. F. McGrew.*

No address

1304 TAYLOR, JOHN F. Role playing with borderline and mildly retarded adolescents in an institutional setting. *Exceptional Children*, 36(3):205-208, 1969.

As a method of communication, evaluation, and psychotherapeutic treatment, role playing is eagerly entered into by most MR adolescents. Having the MR perform a desired behavior pattern is more effective than simply telling him to change his behavior. In addition, learning takes place faster when the entire psychic and motor systems are involved. The MR can role play either actual or idealized behavior of himself, a social role, or a specific person in either a hypothetical or real situation. Role playing is most rewarding

when used in a group setting. When role playing, the MR can communicate information about his perceptions of himself and past experiences, and it can become an effective method for revealing insights and behavior changes. The patient can also profit socially from role playing procedures, such as appropriate use of the telephone and proper control of one's temper. (1 ref.) - *C. L. Pranitch.*

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Kent, Ohio

1305 LOWMAN, EDWARD W.; & KLINGER, JUDITH LANNEFELD. *Aids to Independent Living: Self-help for the Handicapped.* New York, New York, McGraw-Hill, 1969, 796 p. $39.00.

This book, with 65 categories of basic activity, is designed to expand the range of activities and independence of the handicapped and to assist those who help them in their daily life. The aids, illustrated and described, are grouped into 3 main categories: devices which replace or substitute for a missing limb or part of one; devices which assist or control motion; and devices for performing a specific task. For complex disabilities, specially designed instruments are noted, although many of the devices described are common household gadgets (can and bottle openers, forks, and sponges) which were selected because of some unique feature. Principles for resolving physical problems are discussed, and the devices mentioned are illustrative rather than definitive solutions. A specialized bibliography, list of agencies, and periodicals are listed at the end of each chapter. In addition, a comprehensive bibliography and a list of equipment sources with addresses and prices are compiled at the conclusion of the book. This book should prove invaluable to physicians, nurses, occupational and physical therapists, vocational and rehabilitation counselors, special education teachers, and social workers. For the handicapped themselves, the book offers items and ideas that will help them to live easier lives and help to open new avenues of interest in all facets of life. (140-item bibliog; 537 refs.) *C. L. Pranitch.*

CONTENTS: Basic Tasks of Daily Living; Ambulation; Housing; Furniture and Posturpedic Equipment; Homemaking; Communications and Vocations; Recreation and Avocational Interests; Transportation and Travel; Education, Speech, and Organizations Designed to Help the Handicapped.

1306 POMEROY, DIANA. A question of reach. *Special Education*, 58(4):15, 1969.

A functional reach study carried out with 153 cerebral palsied children indicated the need for a fresh approach to the designing and positioning of bedroom equipment and furniture. Reach charts were drawn from 36 measures for each S while sitting, reclining, or lying on a bed. Data were subdivided into 4 age groupings (7 to 9, 9 to 11, 11 to 13, 13 to 15 yrs) and were computer analyzed to show areas which 90% of the children could comfortably reach. The final series of 12 diagrams, representing the varying age groups, showed that below bed level and above bed level (150-250 mm) were uncomfortable reaches. Specialized designs should be suited to normal children as well as cerebral palsied children to facilitate integration of the handicapped child into the community. (No refs.) *D. F. McGrevy.*

No address

1307 WINER, RICHARD A. Dental care for the handicapped. *Journal of Dentistry for Children*, 36(6):449-451, 1969.

In preparing dental care for the handicapped, the dentist should understand the nature of the handicapping condition, and parents should realize that routine daily dental care can free their child from pain and infection. A dentist can care for the handicapped with only a slight adjustment in his office; however, no routine procedures can be followed in treatment. During the first visit, the child's medical problem and current medication should be recorded, and X-rays should be taken if possible. All procedures should be done in a warm, friendly manner. Medication may be required to reduce anxiety in patients; the dosage will depend on the child's activity and behavior and can usually be arrived at by trial and error. If the required dosage would be too high, it is preferable to use general anesthesia either in a proper office setup or in a hospital. Parents should be instructed in ways which they can help their child to clean his mouth with an electric toothbrush and water pic. (8 refs.) *L. S. Ho.*

No address

1308 LEVINE, N. A new challenge--Dental care for the handicapped. *Deficience Mentale/Mental Retardation*, 20(1):2-5, 1970.

Proper dental care for the MR child is both feasible and necessary to ensure better health, speech, and diet. Parents of MR children should arrange for a dental check-up no later than the third year of their child's life and should continue with regular 6-month visits. The parents should maintain full cooperation with the dentist's instructions, and should teach their child good oral hygiene. For his part, the dentist should provide care for an MR child just as he would for a normal child. Most MR children do not need special treatment and can be integrated into any office practice. Government agencies should provide financial aid for dental clinics in schools, hospitals, and institutions, and salaries for dental personnel in MR institutions should be commensurate with those of private practice. The public has a moral obligation to support dental programs for the handicapped. (No refs.)
M. Plessinger.

University of Toronto
Toronto, Canada

1309 Comments on the dental survey returns. *Deficience Mentale/Mental Retardation*, 20(1):6-7, 1970.

A dental questionnaire sent to 20 MR institutions in Canada was returned by all; dental services offered by these institutions included X-rays, fillings, spacers, cleaning, dentures, and extractions. Part-time or consultant dentists often did the work in their own offices within the community. Three of the larger reporting institutions have full-time dentists, and there is general agreement that obtaining and keeping dentists on a regular basis is very difficult. Communicable mouth disease does not appear to be a problem as sterilization procedures are quite effective. The dental personnel at these institutions appear to be sincere in their desire to better the dental health of their charges. (No refs.) - *M. Plessinger.*

1310 COWIE, JOHN. Psychological considerations in the treatment of inborn errors of metabolism. In: Interdisciplinary Society of Biological Psychiatry. *Brain Damage by Inborn Errors of Metabolism*. (Symposium held October 6, 1967, Amsterdam, Netherlands.) Haarlem, Netherlands, De Erven F. Bohn, 1968, p. 112-125.

The brain, as an organ, appears to be particularly susceptible to the biochemical changes found in inborn errors of metabolism; phenylketonuria (PKU) as a model of psychological abnormalities associated with metabolic errors often has as manifestations: MR, infantile autism, hyperactivity, epilepsy, and antisocial behavior. In addition, psychological disorders often are found in other family members, and there is often a history of abnormal pregnancies in mothers of PKUs. Some of the characteristics found in PKU typically are found in other cases of SMR with other etiologies. Dietary treatment of PKU can lead to increased intelligence, less disturbed behavior, more normal EEG, and better health habits. The efficacy of treatment should not, therefore, be judged on IQ measurements solely. Treatment programs must be planned on a long term, team basis, and they should be designed to meet the needs of parents and community. A complete psychological assessment is necessary in all conditions involving inborn metabolic errors. (24 refs.)
A. J. Del Rosario.

1311 CLAGHORN, JAMES L. Drug treatment of mental subnormality. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas Press, 1969, Chapter 17, p. 289-301.

Methods used to evaluate drugs relate treatment success to diagnostic categories of disease, target symptom control, general patterns of relating to others, modes of adaptation, or reports of third parties (such as parents). Among the classes of psychotropic drugs in current use are the phenothiazine compounds, the butyrophenone compounds, antianxiety drugs, sedatives, muscle relaxants, antidepressants, and reserpine. Positive results have been reported for: reserpine and chlorpromazine on the behavior of institutionalized MRs; minor tranquilizers and barbiturates on slightly and moderately MR children; stimulants and antidepressants on a behavior pattern of apathy, inhibition, and autism; dextroamphetamine on MR children with speech defects; stimulant drugs to control hyperactivity and increase attention span; imipramine on MRs with affective disorders;

and diphenhydramine hydrochloride on MRs under 10 years of age. All drug treatment should be individualized and should consider the potential hazards. Symptoms of hyperactivity and anxiety in children under 10 years of age should be treated with either diphenhydramine or amphetamine. The drug of choice in the treatment of conduct disorders, school refusal, and hyperactive impulsivity is diphenylhydantoin (either alone or in combination with amphetamine). Chlorpromazine or a similar aliphatic phenothiazine may be used in cases where hyperactivity is a severe management problem. Experimental evidence for the usefulness of systematic medications in MR children is needed. (24 refs.) *J. K. Wyatt.*

1312 KEELE, DOMAN K.; & VOSE, GEORGE P. A study of bone density: Comparison of the effects of sodium fluoride, inorganic phosphates, and an anabolic steroid (oxymetholone) on demineralized bone. *American Journal of Diseases of Children*, 118(5):759-764, 1969.

PMR, non-ambulatory patients (CA 6 to 16 yrs) treated with oxymetholone increased bone density faster than either control Ss or PMR Ss treated with sodium fluoride or inorganic phosphates. One hundred fifty-two PMR patients were divided into 4 groups of 38 each for the study: group one received sodium fluoride at 0.2 mg/kg/day; group 2 received a single dose of oxymetholone (0.18 mg/kg/day); group 3 was the control group; and group 4 received inorganic phosphates (35 mg/kg/day). Radiographs of the left *os calcis* in each patient were made at 6-week intervals, and data were analyzed by the Student *t* test. Bone demineralization is a severe complication of MR and cerebral palsy because of poor nutrition or immobilization or both. More research is needed on effective therapeutic agents for this pathological process. (30 refs.) - *K. Jarka.*

University of Texas
Dallas, Texas 75235

1313 BOETERS, U.; GRAHMANN, H. Zur Frage der Demenz als Folge langfristiger Psychopharmacotherapie (On the question of dementia as a result of prolonged treatment with psychopharmaceuticals). *International Pharmacopsychiatry*, 2(1-2):71-77, 1969.

Two MR women who were treated for extended periods with strong psychopharmaceutical agents showed symptoms, such as loss of intelligence and neurological disturbances, which were not observed in their original diagnoses. These symptoms increased when the drugs were withdrawn; therefore, physiological dependence on the drugs had occurred. The decrease in mental ability was in the area of abstract reasoning, and speech was affected as well. These observations show a relation between extended drug therapy and dementia. (16 refs.) - *S. L. Hamersley.*

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PROGRAMMATIC ASPECTS--PLANNING AND LEGISLATIVE

1314 MOORING, IVY. A planning model for the development of comprehensive service for the mentally retarded. In: National Association of Psychiatric Technology, & California Society of Psychiatric Technicians. *Major Psycho-Social Problems and the Psychiatric Technician*, Sacramento, California, 1970, p. 90-104.

California is striving to personalize MR care by legislating out the old concept that the MR are sick, are less than human, and should be housed in hospitals with depersonalized custodial care. Since an impairment becomes a handicap only when an individual is not allowed to develop, California is instituting a new model for MR treatment--the phasing out of MR hospitals and replacing them with community-level services. Area boards composed of parents and the local public will delegate responsibilities to departments of education, employment, and vocational rehabilitation. Many of the new concepts are illustrated in the 4-year old Los Angeles County program:

the planning area was divided into the smallest manageable units; the MRs were located by projections corrected to the poverty level in the area; services were surveyed and the deficit of MR nursery schools was remedied and SMR classes were provided in the public schools, state institution personnel serve as consultants to the public schools; development center classes, enrollment to age 21, will be followed by activity centers; each service area will have diagnostic services; and "ambulatory care or counseling units" will do referral. (No refs.) - *M. Plessinger.*

1315 West Virginia. Commission on Mental Retardation. *Promise in Progress.* Charleston, West Virginia, 1969, 31 p.

The final report on the MR planning and implementation program of West Virginia records accomplishments during 1964-1968 in the areas of public awareness of the MR and prevention and treatment of MR. Legislation passed since the Commission's inception includes mandatory testing for phenylketonuria, requirement of all public buildings to be accessible to and usable by the physically handicapped, and mandatory education of exceptional children. In 1964-65, there were only 1377 special education classes compared with 306 in 1968-69. Recreational and day camp programs (track meets, swimming programs, and physical education workshops), community day care centers for SMRs, foster grandparents programs, and vocational rehabilitation programs are other Commission accomplishments. (No refs.) - *C. L. Pranitch.*

1316 BRABNER, GEORGE, JR. A proposal for the establishment of a diagnostic referral center for exceptional children in Delaware. *Education and Training of the Mentally Retarded*, 4(2):57-63, 1969.

It is proposed that within the State of Delaware a diagnostic referral center for exceptional children be established to screen children and make an appropriate referral for treatment. In addition to screening and treatment referral, the center could provide a program for multidisciplinary training and serve as a data storage and retrieval facility. A prime responsibility of the center would be to interpret meaningfully the diagnostic findings and recommendations and, in special cases, provide limited counseling and therapy. The proposed center is designed to alleviate duplication of services to MRs, decrease fragmentation of services, prevent a financial hardship to families, and deter anxious parents from "diagnosis shopping" and being shuffled from one agency to another. There is a definite need for better coordination and integration of services throughout the country for the MR. In terms of a national enterprise of regional centers, Delaware appears to be a desirable and suitable location for a center of this type and scope due to its size, the availability of services, and accessibility to facilities. (7 refs.) *S. Half.*

University of Delaware
Newark, Delaware 19711

1317 YOUNIE, WILLIAM J. The status of cooperative programming at the state level--A national survey. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation.* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30- May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 30-37.

To determine how the concept of cooperative programing had been translated into written formal agreements, the administrative apex of state special education and rehabilitation programs was surveyed. The objectives were to determine what changes states were expected to make in their agreements, obtain an assessment by each agency of the effectiveness of existing agreements, and determine what problems hinder cooperation. Responses (49 states and the District of Columbia) indicated that no state laws mandated cooperation between special education and rehabilitation, although most agencies cooperate in some manner, and cooperative programing most often depends on a formal arrangement that is clear, concise, and enforceable. Cooperation is hindered by lack of state guidelines, qualified rehabilitation personnel, and interagency and community communication. (No refs.) - *C. L. Pranitch.*

1318 DIPROSE, D. C. Goals for the mildly and moderately retarded and how to achieve them. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, Australia, 1969, p. 241-248.

Significant progress has been made in providing meaningful and beneficial programs to the mildly and moderately MR. Each program should be geared toward meeting the child's

special needs and preparing him for adult living. The MR must be exposed to and participate in a variety of enriching experiences. Although public attitudes show change toward better acceptance of the MR, the MR require assistance so that they will be able to function in the community. Every effort should be made to develop and maintain the goals of personal competence, social awareness, and the utilization of a wide range of useful and productive skills. There must be a smooth transition from school to the world of work and a realistic preparation for community living. In addition to appropriate school, vocational, and treatment programs, adequate and proper conditions must be created and designed individually if the needs of each MR are to be met. (13 refs.) - *S. Half.*

1319 CRAWFORD, D. Goals for the severely retarded and how to achieve them. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, Australia, 1969, p. 249-253.

Severely MR individuals should be afforded every available opportunity that will enhance their growth and development. Programs and facilities should be the responsibility of the community with the continuum of services being essential ingredients for the success of the MR. Early detection, evaluation, training, sheltered workshops, community education, social services, and counseling must be made available to meet the needs of the MR and his family. It has been demonstrated that some SMR can perform adequately in sheltered workshop situations. Also when special training is available, many can be maintained at home and participate in community and occupational centers for adults. (No refs.) *S. Half.*

1320 JENNINGS, A. W. Overcoming adverse attitudes to the intellectually handicapped. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work.* (National Rehabilitation Conference Proceedings, May 1969.) Sydney, Australia, 1969, p. 236-240.

The public-at-large must be educated to the fact that the MR can contribute significantly in the community. The adverse social attitudes toward the MR have markedly changed over the past 50 years, but there continues to be a need for a more positive change. Facilities for the training and care of the MR must be first rate, appropriate educational opportunities should be made available, additional skilled staff is required, more intensive research is needed, and a continuum of services to meet the special needs of the MR are essential. The sheltered workshop programs demonstrate that the MR have a valuable and beneficial service to offer the community. Employment and successful job placements will enhance the attitude of the public toward retardates. Programs, projects, and special educational classes must be publicly supported and positive approaches and new concepts utilized and implemented. (No refs.) *S. Half.*

1321 TARJAN, GEORGE. And what of the children? Psychiatry's responsibility for establishing services. *Hospital and Community Psychiatry*, 20(8):223-227, 1969.

One of the recommendations of the Joint Commission on Mental Health of Children was the establishment of a network of child development councils for the advocation of diagnostic, treatment, and preventive services for the children of the areas they serve. Such a commission must operate both professionally and politically. A survey of professional services would point up the need for manpower and the necessity to recruit and train new types of mental health workers. Professional psychiatric groups and volunteer mental health organizations must develop an educational campaign and make intelligent demands on state legislatures for the provision of funds for the planning and development of services to emotionally disturbed and MR children regardless of socioeconomic status. (No refs.) - *E. L. Rowan.*

University of California at Los Angeles
Los Angeles, California 90024

1322 BRIJMOHAN. Social policy for the welfare of the mentally retarded: A plea for reorientation. *Indian Journal of Mental Retardation*, 2(1):9-13, 1969.

India must provide for MR welfare which has lagged due to outdated laws, negative social attitudes, a high death rate, a lack of facilities, and an aversion to scientific approach. Agencies are ill-equipped and the concept of charity degenerates the care. The social policy of the nation is not in tune with the needs and aspirations of the suffering. Since the conditions of the cultural milieu affect the growth of the personality, there is need for the establishment of a social order that is just and conducive to the individual's development. Comprehensive community mental

health programs must be developed which will provide long- and short-term institutional facilities, counseling, and rehabilitation services. (5 refs.) - *M. Plessinger.*

University of Lucknow
Lucknow-7, India

1323 DYBWAD, ROSEMARY; & DYBWAD, GUNNAR. A report to the Australian Council for Mentally Retarded. *Australian Children Limited*, 3(9):264-276, 1969.

Australia's poorly coordinated and inconsistent MR services dictate the formation of a national organization with strong local roots to create effective services; national and state policies should support an independent parent organization in the maintenance of stable, good quality programs. Australia must recognize that MR is a national problem, give attention to the needs of the very young MR, extend and improve school services, with emphasis given to social training, develop a program of work experiences with sheltered workshops, and provide teacher training. Long-term planning should be performed by government agencies, thus insuring uniform progress in mental health among states. (No refs.) *D. F. McGrevy.*

No address

1324 Mental deficiency in Western Australia—Five year plan. *Australian Children Limited*, 3(8):231-236, 1969.

In 1968, a committee planned a 5-year program with emphasis on day care for the 4,000 known MRs in Western Australia. Recommendations for the immobile profoundly MR were: institutionalization with 4 staff members (3 untrained) per 10 MRs; bed care; ward play facilities; and no educational training. Additional suggestions were: mobile profoundly MRs need day care centers, residences, and training centers; SMRs need sheltered workshops with 1 staff member to 10 MRs and more residences; SMR spastics need 1 staff member to 4 MRs in a day care center; autistic children need operant conditioning; moderately MRs should live at home and attend a special preschool, special schools, sheltered workshops, and then move to hostels. Operating costs per person were estimated at $3,993.80 yearly for a hostel of adults, $10.00/week for a day care center, and $6.00/week for a sheltered workshop. Almost $5 million was earmarked for the 5-year program. (No refs.) *M. Plessinger.*

1325 *Report of the Committee on Local Authority and Allied Personal Social Services*. London, England, Her Majesty's Stationery Office, 1968, 370 p. $5.85.

This report of a committee appointed to review the organization and responsibilities of local authority personal social services in England and Wales recommends the establishment of a local authority department which will provide a community-based, family-oriented service which will be available to everyone. Since 1946, services for the mentally ill and MR have been divided between local health authorities and hospital boards, the classification of mental disorder has been reformed, and a more comprehensive responsibility has been placed on local authorities to aid the mentally ill and MR located in their areas. In 1967, local authorities provided care for 69,000, and an additional 150,000 children and their families were aided by preventive or rehabilitative work in their homes. About one-half of the 76,500 children in special schools were classified as EMR, and the majority of the 17,300 MRs receiving training were at local authority centers. Although training centers for MR persons represent the largest expenditure in the local authority mental health services, the present provisions for 20,000 places are inadequate, and many children who could benefit from training do not receive it. The Committee recommends that local education authorities assume responsibility for the education and training of all MR children as well as for the junior training centers. The social service department should be responsible for social care, hostels, and adult training centers. The age for leaving junior training centers should be raised to 17, and the age of transfer to adult training centers should be flexible. A pediatrician and a hospital board should provide consultation services to local education and social service departments. (108 refs.) - *J. K. Wyatt.*

1326 FENDELL, NORMAN. Israel's eternal children. *Journal for Special Educators of the Mentally Retarded*, 4(1):19-22, 1969.

In Israel, 5 government institutions have been established to provide custodial care for 1,300 MRs, and 10% of the Ministry's total budget goes into this effort. Evaluation centers for diagnosis, treatment, and research have been established in all major population areas. Staffs at these centers include physicians, social workers, therapists, and teachers. Also, a special center deals with the care and detection of PKU.

Presently there are 866 special education classes serving 15,000 students, but there is a serious need for trained teachers. Rehabilitation centers where workshops employ approximately 300 trainees have been opened, and hostels combined with workshop programs have been utilized to house retardates who are without families and need special care. (No refs.) - *V. G. Votano.*

1327 NATIONAL ASSOCIATION FOR MENTAL HEALTH. *The Mentally Subnormal in England and Wales*. London, England, 1969, 12 p.

England and Wales provide a continuum of well planned, organized services to meet the special needs of the MR. The 1959 Mental Health Act has made it possible for more MRs to live in the community, and the local authorities have assumed increased responsibility by the development of comprehensive programs and free services for them throughout their life cycle. Maternal and Child Welfare Clinics offer evaluations that encompass a multidisciplinary approach, and health visitor services are available 24 hours a day. Nursery classes, junior training centers, adult training centers, special care units, home teachers, residential facilities, holiday accommodations, social centers and short-term care placements have been established to enhance the growth and development of the MR. Provisions have beeen made for financial assistance, hospital care, diagnostic units, and special regimens of treatment by qualified professionals. Voluntary organizations contribute significantly toward the MRs' adequate community adjustment. An Institute has been established designed for research in the areas of causes, treatment, and prevention. Although extensive progress has been made, additional services, training centers and hostels are required if the needs of the MR in the community are to be met more appropriately and adequately. (No refs.) *S. Half.*

1328 ENGBERG, EUGENIE; JENSEN, LARS FJORD; & LANGE, CARL. *Rehabilitation and Care of the Handicapped*. Copenhagen, Denmark, Ministries of Labour and Social Affairs, 1967, 84 p.

Under the provisions of the MR Act of 1959, MRs in Denmark are cared for by the National Service for the MR, an independent institution which is funded by the Exchequer and directed by the Minister of Social Affairs. The number of MRs receiving help from the National Service has doubled since 1937, and in 1966, 21,000 persons were aided. Of these, almost 60% (12,000) live outside institutions. The 1967-1968 budget of the National Service was 331 million kroner. Twelve local welfare centers provide care for the MRs, and any MR or person who has a condition quite similar to MR is eligible for services. The MR Act provides for parent guidance, compulsory education and training, and adult care. The MRs' compulsory education lasts until they are 21 years of age and includes compulsory vocational training. The National Service offers: maintenance, treatment, education, and training in residential units; education in boarding schools, youth schools, and non-residential institutions; and the services of occupational schools, sheltered workshops, and boarding homes. The Staff Training College (Copenhagen) has a 3-year training program for welfare officers. This booklet provides an outline of programs in Denmark which are designed to help handicapped persons to overcome the consequences of their disabilities. In addition to discussions of provisions for specific disability areas, it contains data on legislation, financing, education, vocational training, employment, daily living activities, and housing. This booklet would be of interest to educators, special educators, legislators, vocational rehabilitation personnel, and administrators of residential facilities. (35-item bibliog.) *J. K. Wyatt.*

CONTENTS: Retrospect; Legislation, Organization and Financing; The National Health Service; General Education of Handicapped Children; Vocational Guidance, Vocational Assessment, Physical and Industrial Rehabilitation, Vocational Training and Retraining; Employment; Activities of Daily Living; Types of Housing; Cash Benefits to the Handicapped and their Family Members; Care of the Blind and Partially Sighted; Care of the Deaf; Care of the Hard of Hearing; Care of Persons Suffering from Defective Speech and Word Blindness (dyslexia); Care of the Epileptics; Care of the MR; Care of the Crippled.

1329 OREGON. STATE EDUCATION BOARD. *Impact 2 of the Title VI Program in the State of Oregon: September 1968-June 1969*. Teaching Research Division. 189 p.

In Oregon, 9 projects for handicapped children were funded under Title VI for the academic year September 1968-June 1969. The projects (1 EMR, 3 TMR, 3 speech and hearing, and 2 multiple handicapped) served 348 children including 63 EMRs and 68 TMRs. The EMR (CA 7-15 yrs) program, with conservation and utilization of natural resources as its focal point, was divided into 2 parts: a 6-day outdoor camp and a series of 10 field trips.

During the camping period, the students spent over 4 hours each day studying nature with the balance of the day devoted to recreational activities, such as canoeing, horseback riding, and fly casting. Because of the success of this program other schools expanded their curriculum to include outdoor classroom study. The 3 TMR projects, were devoted to either precision teaching, vocational training, or speech modification and development. The vocational training program utilized the specialities of senior citizens as teachers and aides in developing productive skills, particularly manual dexterity. (No refs.) *C. L. Pranitch.*

1330 EDUCATION FOR THE HANDICAPPED BUREAU. *Supplement to the Guide to State Plans of Title III: Elementary and Secondary Education Act (ESEA).* Washington, D. C., U. S. Office of Education, 1968, 11 p.

This supplement gives a comprehensive summary of the provisions of Title III (ESEA) which deal specifically with the special educational services of handicapped children. The same standards must be met in projects for the handicapped as in the other Title III projects. Projects must help to provide needed services that are not already available to enhance the development of new enriching educational programs. Title III funds should be expended for projects that can best serve as examples to improve existing services to handicapped children. It represents the efforts of the 90th Congress to help bring about educational programs for all impaired children. The provision of full educational opportunities for more than 5,000,000 handicapped youth confronts the nation and will require maximum use of educational models, imagination, and innovation. Title III provides educators with the opportunity to put into practice research information. Requisites and various specifics which must be met for development in State plans and the types of projects which meet the 15% requirement are outlined. (No refs.) - *S. Half.*

1331 U. S. EDUCATION OFFICE. *Support for Research and Related Activities for the Education of Handicapped Children.* (Bureau of Education for the Handicapped) Washington, D. C., November 1968, 27 p.

Title III, Section 302 and Title V, Section 502 are designed to promote more effective programs for handicapped children through research and related activities. Activities which may be supported include research and demonstration centers, programmatic research, curricula and media development, and surveys. To gain support for research and development centers, 3 full-time senior researchers must be involved in the program, suitable resources and services should be available, the needs of handicapped children must be understood, and the budget should provide for a 5-year projection. Programmatic grants require scientific leadership and experienced, established research talent. To gain support for individual research, the theoretical and research bases must be specified, the population to be studied, described, and the experimental variables outlined. The aid of subject matter specialists and the development of a particular curriculum are necessary for the support of curriculum development projects. Procedures to follow when applying for a grant are included. (No refs.) *V. G. Votano.*

CONTENTS: Authorization for Support; Activities Appropriate for Support; Review Procedures; Funding Dates; Division of Research Consultation; Suggestions for Proposal Development; Construction Grants; Research and Development Center Grants; Programmatic Grants; Departmental Research Development Grants; Research Project Grants; Demonstration Project Grants; Media Project and Program Grants; Curriculum Development and Evaluation; Research Training; Application Form; The Body; Personnel and Facilities; Budget; Supplementary Information; Details About Submitting Proposals; Negotiation Procedures; Data-collection Instruments; Reports.

1332 U. S. HEALTH, EDUCATION, AND WELFARE DEPARTMENT. *Better Education for Handicapped Children. Annual Report--Fiscal Year 1968.* (U. S. Education Office). Washington, D. C., 1970, 35 p.

Due to P. L. 89-313 and Title VI-A, better educational opportunities are provided for

handicapped children. Funds are divided in such a way that MRs receive 53%, speech impaired 8%, visually handicapped 7%, crippled 8%, emotionally disturbed 10%, and deaf 14%. Of the 34 million dollars expended to initiate and expand educational programs and related services, administration received 2.1 million, instruction 21.4 million, equipment 5.4 million, transportation 1.0 million, construction 1.2 million, and miscellaneous 2.3 million. Almost 25,000 staff members received special training, and 24% of these instructors became certified in special education. Programs initiated with these funds include summer activities, day camp, recreation, speech development exercises, preschool clinics, teacher aides, and in-service training. In the 132 projects funded under P. L. 89-313, the objectives included improvement in the areas of language arts, arithmetic, social studies, music, physical education, home economics, and living skills. Only 39% of the nation's school districts have a special education program, and 50% of these participated in the Title VI-A programs. (No refs.) - *V. G. Votano.*

CONTENTS: An Overview, Handicapped Children Served; Program Expenditures; Individual Instruction Pays Big Dividends; Employment and Training of Personnel; Program Achievements; Public Law 89-313 in Review; Title VI-A in Review.

1333 TAFT, CHESTER A. Legislative Developments and Perspectives in California. In: MacLeech, Bert; Schrader, Donald R.; & MacLeech, Pearl Maze, eds. *Eighth Annual Distinguished Lectures Series in Special Education and Rehabilitation, Summer Session 1969.* Los Angeles, California, University of Southern California Press, 1970, p. 68-82.

Special education legislation in California since World War II has funded EMR classes and TMR programs, authorized pilot projects for MR who are also physically handicapped, improved vocational training for the handicapped, ensured education for every exceptional child, eliminated the requirement that teachers major in an academic field to teach MR, required that 3 1/2% of state bond money be used for special education facilities, and shifted MR responsibility from the local to county school districts. Legislative perspectives include: emphasis on labels must change to meet the needs of the child; the goal of training should be to make the handicapped a member of the community; evaluation should be regular and upgrade the system; pilot projects should provide concrete research; cultural MR must be examined; special education must be upgraded; teachers must be trained to teach the multihandicapped; Regional Centers should serve all handicapped; and lay, parent, and professional groups should discuss legislation before passage. (22 refs.) - *M. Plessinger.*

PROGRAMMATIC ASPECTS--COMMUNITY

1334 WALL, HARRY V. In-service training of community personnel: A community approach. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 11-15.

In-service community action institutes (under the direction of the Rehabilitation Training Center in Mental Retardation at California State College) are designed to organize for more effective service to the MR. The institutes bring together specific community key persons who are concerned with the MR for a 5-day session on "A Community Approach to the Rehabilitation of the Mentally Retarded." A community case study approach, involving discussions, field observations, lecture, and demonstrations, is aimed at identifying gaps and needs present in the group's own community. A plan of action is determined, and the team returns to the community to develop and implement the plan. Subsequently, the community selects individuals to attend specialized training in such areas as workshop supervision and work evaluation. (3 refs.) *C. L. Pranitch.*

1335 SCHEERENBERGER, R. C. *A Study of Generic Services for the Mentally Retarded and Their Families*. Springfield, Illinois, Illinois Mental Health Department, 1969, 151 p.

A total of 736 professionals, agency representatives, and parents were interviewed during an Illinois pilot study on generic services for the MR. Selected from middle class and poverty area metropolitan Chicago and down-state communities, the sample included representatives from medical, guidance and counseling, religious, and sociorecreational generic services. In addition, parents of the MRs on the waiting list of these agencies were also interviewed. The objectives of the study were to study the accessibility of generic services to MRs, study the variance of accessibility, identify peculiar patterns of services, identify problems encountered by professionals in providing services to MRs, and identify problems of parents in their attempts to obtain generic services for their children. The results of the study indicate that, although too few in number, generic services are available to the MR and their families; however, these services need more publicity, more accessibility, and better coordination with other agencies. A definite shortage existed in the poverty area, and those services which did exist were not fully utilized by parents because of costs, transportation, language barriers, or lack of parental understanding. Parents in poverty areas rely heavily upon publicly sponsored programs--particularly medical and dental services. The major difficulty professionals encountered involved parental understanding and acceptance of MR, especially in poverty areas where a lack of understanding caused apathy towards using supporting services for parents. A basic difficulty was the lack of community resources in educational, vocational, and residential areas. Implications of the study results are that parents need a program which will assist them in making decisions concerning their child at each stage in his life. (21 refs.) - *C. L. Pranitch*.

1336 ESNARD, MONIQUE. The Red Cross and the rehabilitation of the handicapped. *International Rehabilitation Review*, 20(2):9-10, 1969.

The international League of Red Cross Societies has instituted a number of programs for the physical, psychological, and social rehabilitation of the handicapped. Physical rehabilitation activities include medical attention and educational aid for small children; occupational and speech therapy, prevocational training, and provision of mechanical aids for the handicapped. In psychological and social rehabilitation, the Red Cross has begun to give assistance in providing the MR and mentally ill with activities which aid in their present adjustment and, when possible, their return to life in the community. Day and boarding schools for MRs, camps, sheltered workshops, and training in the economic and social problems to be met in the community are some of the programs now operating. (No refs.) - *E. F. MacGregor*.

League of Red Cross Societies
Geneva, Switzerland

1337 BAILLIE, MOLLIE. An experiment. *Teaching and Training*, 7(2):54-56, 1969.

In a Junior Red Cross group which was started at an MR center, the children learned first aid and how to care for the sick. Improvised uniforms with a red cross stamped on them gave the children a feeling of belonging to something important, and detailed instructions and illustrations enabled them to acquire all the skills needed to qualify for a registration number from the Red Cross. (No refs.) - *E. F. MacGregor*.

No address

1338 Cooperation at its ultimate provides for Quadco project. *Motive*, 15(1):15, 1969.

Four Ohio counties (Williams, Fulton, Henry, and Defiance) have cooperated to open a training center for the handicapped. The center has 7 full-time and 2 part-time staff members, 4 buses to transport workers, prospects of contracts from 20 firms, and an initial enrollment of 35; the center is funded by a grant from the federal government. The training will enable handicapped persons to work in sheltered employment and, it is hoped, enable some to become self-supporting. (No refs.) - *E. F. MacGregor*.

1339 HANNAM, CHARLES L. Parent Teacher Associations in training centres. *Parents' Voice*, 19(3):17-18, 1969.

The father of a MR child expresses his ideas on what an ideal Parent Teacher Association

(PTA) should be and why; parents should visit the school during school hours, and teachers should visit homes. PTAs should avoid placing too much emphasis on fund raising and entertainment and should concentrate on pooling parental and teacher expertise in exploring home and school difficulties. Parents and teachers should not have to pretend that all is well and that all the children need are parties and field trips. During meetings, the presence of a social worker, skilled in working with groups, might ease tension and promote discussion. The PTA should function as an organization where incoming parents can speak freely about their desperation and hostilities and still feel that they are accepted by others who are in similar situations. (No refs.) - *C. L. Pranitch.*

No address

1340 GOLDBERG, BENJAMIN. The activity centre for mentally retarded adults. *Deficience Mentale/Mental Retardation*, 20(1): 30, 1970.

The comprehensive activity center teaches living skills to immature, adult MRs and prepares them for sheltered workshops. Adult MRs may have child-like emotional reactions, disruptive behavior, or additional handicaps. Equipment in these centers should include solid tables and chairs, and there should be grooming and dining areas, a kitchen, and rooms for sewing, laundry, first aid, and office equipment. The curriculum should progress from learning daily activities and behavior through self-care learning of personal hygiene, to learning of home skills, to community skills, and finally to basic work skills. (1 ref.) - *M. Plessinger.*

Children's Psychiatric Research Institute
London, Ontario, Canada

1341 STEVENSON, B. J. (Mrs.) Developing children's abilities in a day care centre. *Intellectually Handicapped Child*, 8(4): 6-7, 1969.

The Intellectually Handicapped Child Society operates a day care center for children with varying degrees of intellectual and physical handicaps. The center includes nursery and preschool programs. The special needs of each child are noted, and programing is adjusted to those needs. The general principle of the center is to provide the children with a consistent daily routine based upon specific objectives. Objectives for the totally dependent include improving physical health; and stimulating motor and sensory development by change of atmosphere, music, and the company of other children. Major objectives for the nursery group (CA 2-4 yrs) are: self-care training; interacting socially during play; improving coordination with patterning exercises; and promoting language development with speech exercises, repetitive sounds, and training exercises in chewing, blowing, and swallowing. The preschool objectives include: improving social behavior and self-care; developing language through speech therapy, story time, and tea parties; improving motor control through physical exercises; promoting the development of perception and memory with music, handicrafts, and color sorting; and cultivating discrimination in size and shape. (No refs.) - *C. L. Pranitch.*

No address

1342 BINNS, J. K.; CARLISLE, J. M.; NIMMO, D. H.; PARK, R. H.; & TODD, N. A. Remanded in hospital for psychiatric examination. Sec. 54, Mental Health (Scotland) Act, 1960--A review of 107 admissions. *British Journal of Psychiatry*, 115(527):1125-1132, 1969.

A review of 107 admissions in a 2-year period to the Leverndale Hospital for psychiatric examinations (by court order) includes: the psycho-social, psychiatric, and criminal background of the offenders; the offenses for which they were remanded; and the diagnosis and advice submitted to the courts regarding medical disposition. Sixteen of those remanded to the hospital were found to be MR, and all 16 were male. One of the 16 was 16 years old, and another was only 13. Eight had participated in a special school program and/or had resided in a facility for the MR. Three were illiterate, and 6 had a prior police record. Charges against the 16 ranged from indecent exposure to theft. Most of the discrepancies found between the court's decision and the psychiatrist's recommendation were in the disposition of the MRs or those other offenders with personality disorders. The disposition of 4 MRs was medically unsatisfactory; for administrative and clinical reasons, it was felt that the MRs should be confined in an institution for the MR rather than in a hospital for the mentally ill. A discussion of the pros and cons of Section 54 revealed that many of the offenders could have received psychiatric care and supervision without the legal formalities required for remand to a mental facility under this Section. (9 refs.) - *S. Half.*

Leverndale Hospital
Glasgow SW 3, Scotland

1343 BINNS, J. K.; CARLISLE, J. M.; NIMMO, D. H.; PARK, R. H.; & TODD, N. A. Remanded in custody for psychiatric examination. A review of 83 cases, and a comparison with those remanded in hospital. *British Journal of Psychiatry*, 115(527):1133-1139, 1969.

Of 83 cases remanded in prison or home (67 males and 16 females) for psychiatric evaluations, 18 were diagnosed as MR. All cases were considered in terms of: psychiatric, psycho-social, and criminal backgrounds; offenses; diagnosis and recommendations submitted to the courts in regard to medical disposition; and the degree to which that advice was followed. Comparisons of these cases with those (107) who were remanded directly to the hospital showed that the latter group had a higher rate of psychotic illness, a greater proportion of female cases, older age groupings, a tendency toward less serious crimes, a lower incidence of personality disorder, and a higher ratio of previous psychiatric illness. The incidences of MR and of alcholism were almost equal. Eighty-six percent of the offenders had MR, alcholism or personality disorders. Of the 18 MR, only one was an informal admission, 2 were informal admissions under probation orders, one was admitted under Section 24, 7 under Section 55, and one was recommended to be admitted to a state mental hospital. Only 1/3 of the cases received psychiatric treatment, and it is hoped that in the other cases, the evaluations and studies were of some benefit to the courts in rendering a disposition. The degree and nature of the involved problems may be useful in planning future treatment facilities for psychopathic offenders. (3 refs.) - *S. Half*.

Leverndale Hospital
Glasgow SW 3, Scotland

1344 HAHN, HANS R.; & RAASCH, WERNER H. *Helping the Retarded to Know God*. Saint Louis, Missouri, Concordia Publishing House, 1969, 112 p. $1.95.

Eight lessons have been prepared by a parish education committee for the purpose of training church members to teach special religious education classes of retarded children. Part I deals with the nature of MR--classification, etiology, terminology, and physical, social, and emotional characteristics. Part II is concerned with the spiritual needs of the retarded, while Part III emphasizes teaching and learning. Learning characteristics, teaching and planning techniques, material selection, teacher-made materials, and equipment in relation to MRs are the areas of concern in this section. The final section deals with the teacher and his responsibilities in respect to understanding and managing the behavior of students and working with parents of MRs. (75 refs.) - *V. G. Votano*.

CONTENTS: What is Mental Retardation? Who are the Retarded? Our Christian Concern for the Retarded; What Can We Do for the Retarded? How Retarded Persons Learn; How can we Teach the Retarded? Evaluating and Selecting Curriculum Materials; Who Shall Teach the Retarded in the Church?

1345 HAHN, HANS R.; & RAASCH, WERNER H. *Instructors Guide for Helping the Retarded to Know God*. Saint Louis, Missouri, Concordia Publishing House, 1969, 52 p. $1.95.

The Lutheran Church--Missouri Synod has planned an instructional program to meet the needs of MRs. Consequently, a leadership training course has been designed to meet the demand for instructors of special religious education classes. The course, designed for 10 sessions, deals with the nature of MR, the spiritual needs of the retarded, the concepts of teaching and learning, and the teacher's responsibility in working with the MR and his parents. Opening devotions, hymns, and scripture readings are suggested in conjunction with the sessions. Many supplementary readings and references are listed for the instructor's use. (24-item bibliog.) - *V. G. Votano*.

CONTENTS: Preparing to Study the Course; What is Mental Retardation? Who are the Retarded? Our Christian Concern for the Retarded; What Can We Do for the Retarded? How Retarded Persons Learn; How Can We Teach the Retarded? Evaluating and Selecting Curriculum Materials; Who Shall Teach the Retarded in the Church? Test and Review Period.

1346 SOWBY, MARY. *Dorothea*. Toronto, Canada, United Church of Canada, 1969, 25 p.

The MR can be valued members in their families and make a significant contribution in their community if they are accepted with warmth and understanding. It is hoped that congregations will minister effectively to the MR and their siblings and parents. The book is an account of how a family met the needs of their MR daughter some 50 years ago when people shunned away from openly discussing the MR and the many academic advantages and programs to enhance their growth and development were non-existent. (No refs.) *S. Half*.

PROGRAMMATIC ASPECTS--RESIDENTIAL

1347 WHITE, WESLEY D.; & *WOLFENSBERGER, WOLF. The evolution of dehumanization in our institutions. *Mental Retardation/MR*, 7(3):5-9, 1969.

The origins and evolution of dehumanizing practices in public institutions for the MR in the United States are traced and discussed. At first, these practices appear to have reflected cultural attitudes toward deviancy in general, but today, the values of the general public appear to be more advanced than the values of those who control institution practices. (17 refs.) - *Journal abstract.*

*Nebraska Psychiatric Institute
Omaha, Nebraska

1348 MORRIS, PAULINE. *Put Away: A Sociological Study of Institutions for the Mentally Retarded*. New York, New York, Atherton, 1969, 355 p. $10.75.

A survey of the physical, educational, and occupational provisions, the social environment, and the community relations of facilities for the MR in England and Wales and the degree to which these institutions meet their goals includes data on almost 1/2 the hospitals in these countries. A high proportion of patients lived in dilapidated, decrepit, barrack-like buildings, 2/3 of which were constructed prior to 1900. Overcrowded, poorly-staffed wards were prevalent. More than 80% of the patients were fully ambulant, and with the exception of epilepsy, the incidence of serious mental and physical illness appeared small. Available IQ data were limited and unreliable, and neither these nor other assessment data were used to classify patients. There was very limited consensus among the staff or between hospitals concerning treatment objectives, and the consequences of hospitalization for most patients were containment and family relief. At least 48% of adult MRs received very little stimulus or training and spent a large portion of their time doing nothing. Most hospitals had an average of one nurse per 16 patients, and there was an absolute shortage of specialist facilities. A relatively small number of patients benefited from specialist services, a factor which appeared to be related to constricted channels of communication within hospitals. MR hospitals were almost totally isolated for both personnel and patients, and communication between hospitals and the wider community was neither established nor encouraged. The staff evidenced concern about the patients as individuals, and many older staff members were dedicated to the care of the MR. The detailed findings of this survey and recommendations for change would be of interest to institution administrators, psychiatrists, educators, nurses, psychologists, and sociologists. (106 refs.) - *J. K. Wyatt.*

CONTENTS: Social Aspects of Subnormality; The Design of the Survey; Hospital Provision for the Mentally Subnormal; The Patient Population, the Physical Environment and Facilities; The Problems of Staffing; Education, Training, and other Specialist Services; Life and Relationships in Hospital; Relationships between the Hospital and the Community; Blackbrick and Cloverfield: A Study of Two Subnormality Hospitals; Voluntary Hospitals and Homes; The Ideology of Treatment; Organizational Characteristics of the Subnormality Hospital; Summary and Concluding Comments.

1349 CLELAND, CHARLES CARR; & SWARTZ, JON DAVID. *Mental Retardation: Approaches to Institutional Change*. New York, New York, Grune & Stratton, 1969, 270 p. $12.50.

This book, including brief notations, exercises, and case studies, presents some of the most common and perplexing aspects of institutional situations--issues and problems of the new employee, the PMR and higher level retardates, vocational rehabilitation training, the role of management, and operational policies. Three common problems in institutions are: attendant favoritism toward specific children, intershift cooperation, and the spoiling of specific children. In the rehabilitation of MRs, training in a sense of humor should be included as an aid to better adjustment. One approach to the institutionalized EMRs' need to express himself, to receive mail, and to learn society's rules would be the development of an EMR magazine.

Complementing letters were sent by the staff advising parents of their child's welfare. Also, a tape recording made by the child could be forwarded; the recording would serve as a direct progress report as well as another opportunity for the MR's self-expression and speech development. Since attendant turnover is greater on wards for PMRs, a possible solution might be to schedule attendants for 4 hours on PMR wards and 4 hours on EMR or TMR wards. The informal style of the book, the brevity of readings, and the wide range of topics makes this book a valuable resource and training technique for the entire institutional force. (356-item bibliog.; 60 refs.) *C. L. Pranitch.*

CONTENTS: The Human Side of Institutions; Profound Retardation: Programing for Change; Moderate and Mild Retardation: Approaches to Habilitation; Innovating for Change; Management's Role in Institutional Change.

1350 MARKS, JOHN R. The future of the institution. *PCMR Message, Newsletter of the President's Committee on Mental Retardation*, February, 1969, p. 10-12.

Objectives of an institutional program should be prevention, early diagnosis, medical correction when possible, maintenance of an environment which enhances personality development, training patients to their greatest potential, and community structuring so that the MR may be absorbed into it. Organizationally, all MR services must be a part of a comprehensive child care program; the center and the operational emphasis must be at the community level; interagency programing must be coordinated by an administrative structure with authority to implement. Early detection of MR could be accomplished through comprehensive well-child clinics with institutions serving special purposes including: temporary care for a more definitive diagnosis, specific medical therapy, emergency care, and specialized training; long-term care for SMRs and PMRs when the community lacks facilities; and training centers for professionals. In developing comprehensive community programs, certain changes must take place including the elimination of program categorization at all government levels, the reduction (at the university level) of monies funneled into esoteric projects, the limitation of funds allocated to institutions which are poor substitutes for community services, the development of large-scale subprofessional training programs, the utilization of volunteers, the involvement of families as part of treatment teams, and the establishment of adequate interpersonal relationships. (No refs.) *K. Lee.*

Idaho State School and Hospital
Nampa, Idaho 83651

1351 DENTLER, ROBERT. The Role of a residential facility in modern society. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in the Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 1-10.

Although progress within the institutions has been continuous and new methods and programs have reduced the burden of being disabled, the community, expressing its outdated norms and values, still prefers the isolation of residents rather than allowing them to use what they have learned in the community setting. The boundaries between the community and the institution remain firm; although, as the society becomes increasingly more concerned about the minority and disadvantaged groups living in the community and as human relations programs/training occur more frequently in public education, these barriers will weaken. The potential of the closed institution is that it can operate relatively free from community intervention. They can develop their own hierarchy of values meaningful to the residents rather than to society. Finally, the closed institution is in a better position to design specific programs for specific residents than is society, who is relatively distant from the problems. There is no reason why these potentials can not eventually be realized in an open institution as well. (No refs.) - *K. H. Vogt.*

1352 DINGMAN, HARVEY F. The present nature of residential populations. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in a Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 11-33.

No model yet devised provides a true understanding of the population of MR institutions. The goal of a survey should be to provide information which best determines the future needs of the retarded. This will enable administrators to plan now for future requirements. In studying trends, it is important to include all data on the patients and develop hypotheses which will lend themselves

to an analysis of the patients' status. One method is by studying "cohorts" or groups of patients admitted during a specified time period and followed over a predetermined number of months. Follow-up studies, perhaps a decade later, reveal changes occurring over time. It is important to note that changes in residential population are caused partly by the development of new programs outside the institution as well as due to the construction of new facilities. Various methods of studying the population give rather consistent results, but unfortunately, they allow only for conclusions based on previously collected data. What is needed is a more formal system of predictions and testable hypotheses which will allow control of social forces that produce unwanted change. (34 refs.) - *K. H. Vogt.*

1353 STEVENS, HARVEY. Multidimensional problems of administration in a residential setting. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in the Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 34-41.

In order for residential programs to realize their full potential, it is necessary for them to change from a mechanistic to a humanistic structure. A mechanistic organization may operate effectively over time; however, since it is totally dependent upon its input (employees, administrators), it is extremely difficult for it to respond to changing outside environmental factors. Output becomes limited and/or inflexible. A humanistic organization is fully integrated internally and externally and can adapt to political and social change. It is the administrator's objective to insure that internal and external systems are coordinated. He must forego his quest for personal power and achievement of personally important goals for the attainment of goals which are most beneficial to the organization. The more satisfying the organizational goals are to him and his employees, the more concentrated their efforts will be in attaining them. The administration must know how to help his people do their work and, in doing so, help them achieve what they have set out to do so that the accomplishment of the goal becomes important not only to the organization but to the individual as well. The appropriate use of reward is most likely to insure this occurrence. Since different types of rewards have varying degrees of value to the individuals, the administration must learn which rewards will have the greatest positive effect on each employee and then use it when the appropriate performance has been elicited. (No refs.) - *K. H. Vogt.*

1354 ROOS, PHILLIP. Resources for implementing the administrative model. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in a Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 112-140.

The SMR's behavior may be a result of an environment which fails to respond to his actions. Several techniques/methods are generally discussed which will aid each organization, group, or individual having contact with the MR to be more effective. One confusion is over functional and line authority. A type of problem can not be solved only by members of a single discipline because MR is not exclusively any one type of problem. Departmental fragmentation must also be reduced; each department can not be independent of the other, therefore, a coordination of efforts must exist for proper treatment. In order to maximize resources in a decision making process, there must be a free flow of communication both up and down the chain of command; attendants and ward-personnel have a great deal of knowledge of each MR and this should have bearing on decisions flowing down from the administration. Neglected resources should also be tapped. A consultant, if used as an outside observer and a source of information rather than a decision maker, can be most effective. Also, rather than building resources in the institution, administrators should make use of what is available in the community. Volunteers, if used as an extension of the professional staff rather than being solely a mother substitute, can provide much needed treatment and free professionals for more detailed, exacting work. Finally, parents are a great source of information and their knowledge should be recognized; free communication is essential between them and the administrators. (No refs.) - *K. H. Vogt.*

1355 LEWIS, ARTHUR. An administrative model for the residential setting: An application of the open system theory. In: Younie, William J.; & Goldberg, I. Ignacy, eds. *Special Education Administration in a Residential Setting: Proceedings*. New York, New York, Columbia University Teachers College, 1970, p. 141-156.

The bureaucratic structure upon which the majority of the MR institutions is designed is dysfunctional and should be replaced. The open theory system attempts to view the organization as a whole rather than to analyze its components and as an organization which relates to the environment rather than being independent of it. The residental setting takes staff, resources, and pupils from the

environment, transforms them into a service (usually education/training), and exports back to society some product, hopefully a better adjusted child who is able to assume a productive role in the community. These individuals, in turn, become taxpayers who provide further resources for the institutions. This theory was used to explain how a design for evaluation could be developed as an administrative model. The purpose of evaluation becomes a system whereby the institution can maintain itself and experience continued growth. The entire spectrum of subsystems must be evaluated with respect to their goals and interrelationships with other systems. The goals of the substructures must be in harmony with the goals of the institution. Evaluation should be a continuous process within the institution as well as a monitoring of all inputs from and outputs to the environment including staff and patients and the procedures used in their selection and assignment. (9 refs.) - *K. H. Vogt.*

1356 SCHEER, RALPH M.; HAWKE, SHARRYL; & RICE, NORMAN G. *Community Preparedness for Retardates*. Austin, Texas, Austin State School, 1969, 103 p.

A Hospital Improvement Program (HIP) at Austin State School involved 200 mildly MR males and females (CA 14-35 yrs; IQ 50-70) in a 2-year educational-vocational training program which emphasized de-institutionalization of the MR in preparation for community living. It was demonstrated that effective learning could materialize and more children reached in selective group situations. Material presented to the MR was meaningful and aided them in gaining self-confidence, esteem, awareness, and acceptance; also they were better able to form wholesome interpersonal relationships with adult figures as well as with their peer group. Socialization and structured recreational programs enhanced their social, physical, and intellectual growth and development. Attendants and other staff members markedly benefited by the HIP Project and the implementation of an intensive in-service training program. Attendant evaluations were made at specified intervals, and the program was modified when indicated. Adult education curriculum, grooming, social hygiene, sex education, transportation, communication, current events, dating, constructive use of leisure time, money management, and the law were prime areas considered in the project. (14 refs.) - *S. Half.*

CONTENTS: Education for Striving Adults; Educational Considerations of the Adult Education Curriculum; Attendant Evaluations; Grooming for Males; Social Hygiene and Sex Education; Communication and Transportation; You and the Law; Current Events; Bicycle Training; Dating; Constructive Use of Leisure Time; Money Management; World of Work.

1357 DOROTHEA, M. Striving to make their way of life more normal. *Intellectually Handicapped Child*, 8(4):16-19, 1969.

The primary objective of St. Raphael's residential and day school is to get the MR girls functioning at an acceptable level and then send them back into society. The premise is that the more normally MRs are treated, the more normally they act, and the more normal they become. Younger girls follow, as much as possible, a public school and kindergarten curriculum with the addition of such crafts as sewing, weaving, leather work, and knitting. Older girls attend a workshop where they do piece work on knitting, overlocking machines, and sewing machines. The girls must sign in and out, receive a bi-weekly paycheck, and have their own bank accounts. The program also includes recreational activities. The girls are taught responsibility by caring for various pets including lambs, calves, kittens, and birds. The program, as a whole, functions to develop each MR's self-concept so she can accept her limitations and learn to do her best with them. (No refs.) *C. L. Pranitch.*

St. Raphael's Home of Compassion
Carterton, New Zealand

1358 GREEN, KAREN M. Mutual benefits of a foster grandparent program in a hospital for the retarded. *Hospital and Community Psychiatry*, 20(8):248-251, 1969.

A foster grandparent program benefits persons over 60 by providing them with new skills, significant personal relationships, and some financial aid and benefits institutionalized MRs by giving them love, individual attention, and fun. State and federal agencies provided funds ($1.65 an hour) for the hiring of persons over 60 who have poverty level incomes to work with the MR. Foster grandparents are given 40 hours of in-service training, meet in small groups to discuss problems with an area supervisor, and spend 10 hours a week with each of 2 MRs who have IQs <35, few family contacts, multiple handicaps, and emotional problems. The foster-grandparent-child contacts include walks, meals, excursions, and general loving attention and concern. The

MRs gained weight and showed unexpected improvement. (No refs.) - *M. Plessinger.*

Glenwood State Hospital and School
Glenwood, Iowa 51534

1359 DON, YEHUDA; & AMIR, YEHUDA. Institutions for mentally retarded in Israel--Cost structure and budget analysis. *Mental Retardation/MR*, 7(3):36-39, 1969.

In Israel, the average cost/patient to maintain the MR was I.L. 328.8 in government institutions, but only I.L 207.0 in private or public institutions ($1.00 = I.L. 3.5); the increased cost could be ascribed to a combination of differences caused by basic objective conditions (population heterogeneity), institutional or organizational differences (size and cost effect of ownership), and more expensive combinations of services (standards of treatment) offered by government institutions. Although the amount and variety of special services offered in government institutions were greater than in private or public ones, the difference in cost was far greater than the difference in standard of services. In Israel, there is no social justification in operating high cost, high standard institutions; therefore, the gradual liquidation of government-operated institutions is recommended. In addition, the planning of new public institutions should be done on a considerably larger scale; 400-500 patients/institution would be nearer to the large scale optimum than the 200/institution which appears to be too large for "small unit functioning" and too small to take advantage of economies found in "large unit functioning." (No refs.) - *M. D. Nutt.*

No address

1360 BERG. ELITH. A Five-Year Forecast of the Demands for Institutional Care on the Island of Funen, Denmark. Copenhagen, Denmark, National Service for the Mentally Retarded, 1969, 6 p. Mimeographed.

An analysis of the future needs for MR care over a 5-year period for the island of Funen, Denmark revealed that 969 residential places and 1,093 nonresidential places would be needed by 1972 to serve the island's MR population. Estimates were determined from the analysis of a sample consisting of all persons registered in MR care at the ages of 7, 12, 17, 22, 27, 37, and 47 years. Based on a total evaluation of the status of each individual and the prospect for his development, an estimate was made as to the kind of institutional care each will need within the next 5 years. The estimated number of institutional places needed for the persons in the sample was then used to calculate the corresponding need for the total registered population. An estimated need of institutional places for care of children (CA 5 yrs and under) was added. The sum of the estimates of the sample plus the estimates of children under 5 years of age and the expected net increase of the clientele comprises the total need of MR care capacity until the end of 1972. (No refs.) - *C. L. Pranitch.*

1361 MITTLER, PETER. The need to end uncertainty. *Special Education*, 58(4): 6-10, 1969.

The decision to transfer the hospitals and the junior training centers to the Department of Education and Science gives to educators the responsibility for doing everything possible to bring MR children into the mainstream of education. The authorities should review each child and determine the most appropriate environment for his development. The educational authority can productively employ joint training for nursing and teaching staffs; special courses in child development, play methods, and similar subjects could take place in the hospital or the nearest college of education. A more stimulating environment for children can be provided by reorganizing the method of deploying nurses, by increasing the staff, and by reducing the hospital's isolation from recent educational innovations. (9 refs.) - *D. F. McGrevy.*

Manchester University
Manchester, England

1362 REDFORD, A. P. Adult training centres--A balanced programme? *Teaching and Training*, 7(4):104-111, 1969.

A critical review of the Adult Training Center program suggests the need for further research and planning and organization. A balanced program should take into consideration the age, ability, and aptitude of the trainees and their basic needs (physical, social, psychological, and esthetic). Research leading to the discovery of new teaching techniques may help the MR to understand more fully concepts of language, number, time, and money. (No refs.) - *D. F. McGrevy.*

No address

1363 Subnormal hospitals. *British Medical Journal*, 3(5668):426-427, 1969. (Leading article)

A series of exposes of conditions in mental hospitals in England has pointed up the need, not only for more and better facilities, but for segregation of mentally ill from MR patients. Improvement of working conditions and training for staff as well as a new hospital for dangerous mentally ill patients is needed to bring these institutions up to approved standards of care. (No refs.)
E. F. MacGregor.

1364 GIBSON, J. Subnormal hospitals. *British Medical Journal*, 3(5670):592, 1969. (Letter)

Recent articles on "subnormal hospitals" place an exaggerated emphasis on the less desirable aspects of hospitals for the MR and ignore the many advances made in socialization, vocational rehabilitation, and education against great odds. Such articles do a disservice to dedicated hospital staffs, encourage resignations, and discourage recruitment of new personnel. (No refs.)
E. F. MacGregor.

St. Lawrence's Hospital
Caterham, Surrey, England

1365 ANTON-STEPHENS, D. Subnormal hospitals. *British Medical Journal*, 3(5670):592-593, 1969. (Letter)

Articles publicizing the inadequacies of hospitals for subnormal and mentally ill patients fail to give credit to the large majority of dedicated workers in these institutions. (No refs.) - *E. F. MacGregor.*

Highcroft Hospital
Birmingham, England

1366 ROSE, HUGH. Subnormal hospitals. *British Medical Journal*, 3(5671):652, 1969. (Letter)

Mental Health Acts were passed in England (1959) and Scotland (1960) to protect the interests of mentally ill and MR patients. Members of a Mental Welfare Commission check on hospitals for MRs and the mentally ill, and patients may write to them or ask for an interview. However, more needs to be done. Legislation should be reviewed, enough separate Commissions should be appointed so that help is readily available to people all over the country, and separate facilities should be setup for mentally ill and MR patients. (No refs.) - *E. F. MacGregor.*

No address

1367 WHITEHEAD, J. A. Subnormal hospitals. *British Medical Journal*, 4(5676):173, 1969. (Letter)

Although the Mental Health Act of 1959 was a good start towards improving conditions in hospitals for the MR and mentally ill, the primary need is for more adequate, better trained staffs, freer and more community-oriented programs, and an increase in funds. (No refs.) - *E. F. MacGregor.*

No address

1368 Care of the mentally subnormal. *Lancet*, 1(7623):727-728, 1969. (Editorial)

Present facilities for the MR are woefully inadequate. Not only is more money needed for buildings and adequate personnel, but management committees, professionals, and the general public need a more informed and liberal attitude. Construction of facilities offering community-based services would provide a better life for the MR and a better opportunity for community participation in mental health programs. (4 refs.)
E. F. MacGregor.

1369 SHAPIRO A. Care of the mentally subnormal. *Lancet*, 2(7627):957-958, 1969. (Letter).

The solution to the problem of where and how to care for the MR is clouded by the fact that discussants have not differentiated between those MRs who can achieve integration in the community and those who are so severely handicapped that they will need residential care throughout their lives. The provision of care for the latter group outside the hospital is unreasonable. (No refs.)
L. Kyle.

Harperbury Hospital
Herts, England

1370 KUSHLICK, ALBERT. Care of the mentally subnormal. *Lancet*, 2(7631):1196-1197, 1969. (Letter)

Virtually, all residential care for the MR in England is provided by hospitals (62,300 beds); local health authorities provide 5,000 beds in hostels. Most hospitals are overcrowded and have long waiting lists (predominantly TMRs and SMRs). Facilities are needed for current and future needs in the local geographical area--to meet existing needs, 50 beds/100,000 population are needed; to meet future needs, 12 additional beds/100,000 population should be provided. (7 refs.) *M. Plessinger.*

Wessex Regional Hospital Board
Winchester, England

1371 DUTTON, GORDON. Care of the mentally subnormal. *Lancet*, 2(7633):1305-1306, 1969. (Letter)

The statistics of Dr. Kushlick's Wessex plan for the mentally subnormal were published, but the costs of teaching, training, and transport were not. Hospitals for the mentally subnormal have long suffered from financial restriction, staff shortages, and overcrowding. Only when these conditions are remedied can fair comparisons be made. Other branches of the profession, administrators, and the public should be made aware of the problem. (1 ref.) - *L. S. Ho.*

South Ockendon Hospital
Essex, England

PROGRAMMATIC ASPECTS--RECREATIONAL

1372 KEERAN, CHARLES V., JR.; GROVE, FRANCES A.; & ZACHOFSKY, TONI. Assessing the playground skills of the severely retarded. *Mental Retardation/MR*, 7(3):29-32, 1969.

Severely and profoundly retarded children who are cared for in institutions are known to be limited in their ability to use playground equipment. This paper describes an instrument which was developed to provide a profile of an individual's competence in the use of common playground items. When compiled on groups of children, the data for this instrument, the Playground Progress Sheet, affords valuable information to administrators and others responsible for program planning. It also holds promise as a research device. (No refs.) - *Journal abstract.*

University of California Los Angeles
Los Angeles, California 90024

1373 BAER, LORRAINE; & STANLEY, PHYLLIS. A camping program for the trainable retarded. *Education and Training of the Mentally Retarded*, 4(2):81-84, 1969.

TMR children can derive vast benefits from a structured, well-planned and organized camping program. Fifteen students from the Rockland County School (New York) for TMR children participated in a 4-day camping project that provided them with new enriching experiences, gave them the opportunity to gain independence, and exposed them to meaningful group interaction. Physical activities helped the MRs to increase and stimulate their perceptual-motor controls, develop a better self-concept, improve judgment in the area of danger situations, and develop better self-care skills. Marked advancement was noted in the areas of language development, communication, and speech. All of the children assumed responsibilities within their individual limitations and were exposed to a variety of training and reinforcing experiences. The project demonstrated that camping programs for the TMR enhance their growth and development, and it was recommended that camping should be a significant part of the school curriculum. (No refs.) - *S. Half.*

Rockland County Board of Cooperative Educational Services
West Nyack, New York

1374 ALBERT, RUSSELL. A concentrated program of outdoor education for educable and trainable retarded. *Therapeutic Recreation Journal*, 3(3):25-28, 1969.

EMRs and TMRs (CA 9-17 yrs; MA 4 to 12 yrs) who participated in a 7-week outdoor education program significantly ($p < .01$) improved

in science, social studies, language development, and art. The 106 Ss, in groups of 9 or 10, viewed appropriate films, took field trips, and participated in night campfires and cookouts. The program helped the MR youth to establish an awareness and understanding of the outdoors and outdoor habitats and provided a fresh outlook and revitalization of attitudes for staff and residents. Coordinated efforts of special education teachers, members of the activity therapy staff, college students, and community volunteers provided the retarded children with many and varied enriching experiences that enhanced their growth and development. Vocational opportunities for the MR in outdoor camping and recreational facilities should be explored, and research should be conducted on outdoor education in order to validate its value. (No refs.) - *S. Half.*

A. L. Bowen Children's Center
Harrisburg, Illinois 62946

1375 HAYES, GENE A. Recreation services for the mentally retarded in the state of Kansas. *Therapeutic Recreation Journal*, 3(3):13-19, 1969.

A task force on Recreation and Physical Fitness for the Retarded in the State of Kansas sent questionnaires to 482 agencies throughout the State to determine the status of recreation services being offered to the MR by public and private agencies. From the 219 questionnaires returned, it was found that: scouting and local agencies provided the most activities; physical fitness was stressed while camping and social activities were usually neglected; universities offered specialized activities while community agencies had more diversified recreation; scouts, special education, and community agencies often included MRs with normals; and 50% of the agencies felt MR recreation was their responsibility although they needed more money, staff, MR knowledge, and facilities. The Task Force recommended that MRs should be integrated with normals in more social and interpersonal activities; all colleges should include instruction and experience with MR recreation; a state therapeutic recreation specialist should coordinate activities; training centers and community agencies should regularly exchange staff; a recreation counseling, referral, follow-up program should be developed; and all local year-round recreation and service agencies should have a staff member to supervise MR programs. (No refs.) - *M. Plessinger.*

Texas Woman's University
Denton, Texas 76201

1376 SYVERSON, FRAN. WARCEY--A community's answer to its exceptional children's recreational needs. *Exceptional Children*, 36(2):125-126, 1969.

The Whittier (California) Area Recreation Committee for Exceptional Youngsters (WARCEY) provides the MR, CP, deaf, hard of hearing, and physically handicapped children with the same kind of recreational activities that are usually experienced by normal children. WARCEY consists of parents, adults, and teenage volunteers who work closely and cooperatively with education and recreation instructors and community agencies toward the goal of providing recreational programing while being cognizant of the special needs of the exceptional youth. Funds are provided by interested community organizations. Bowling, teen dances, and day camp programs are provided for the TMR in addition to swimming and parties for all handicapped children and a newsletter for their families. (No refs.) *S. Half.*

Whittier Daily News
Whittier, California

1377 NASH, RALPH J. A recreational program for brain injured children. *Journal for Special Educators of the Mentally Retarded*, 4(1):16-19, 1969.

A weekly recreational program was established for brain injured children (CA 6-14 yrs) to develop perceptual-motor abilities and group interaction and to provide opportunities for success in relation to the child and his peers. Such a program must be routinized and structured and highly organized with a trained staff. Three training sessions were held for the volunteer staff who were psychologists, teachers, high school and college students. The equipment consisted of trampolines, bean bags, balls, arts and crafts materials, records, and exercise devices. Some of the children needed individual attention and help in learning to become a group member. Distraction was reduced by partitioning the gym. (No refs.) - *V. G. Votano.*

Highland Park Public School System
Highland Park, New Jersey

1378 EPP, DUANE L. Try a batting tee. *Challenge*, 4(4):5, 1969.

Inability to hit a ball limits participation of the MR in baseball and other activities. The batting tee has been used to aid beginners develop a correct and more effective

swing. The tee should reach a height somewhere between the batter's shoulders and waist. When the player learns to hit the ball at one height, change the level of the tee so that he will be able to practice at other levels. Indoors, a wiffle ball and plastic bat may be used. The tee can be made from a pipe, a piece of radiator hose, and a radiator clamp for adjusting the height. (No refs.) *Barbara Parker.*

Martin Luther School
Beatrice, Nebraska

1379 PETERS, MARTHA L. Music and the exceptional child. *Therapeutic Recreation Journal*, 2(3):3-8, 1968.

There is a close relationship between recreative experience and esthetic experience, as pointed up by the similarities of their definitions and the structural similarities between recreative activity and esthetic activity. Because music is music only and does not represent something else, all people can respond to it in their own way. Music can be taught to any child, and the basic human response to music can be rescued and developed in a disabled child to the point where listening becomes a pleasurable experience and performing gives satisfaction. Music education for exceptional children is provided for 3 general purposes: as an aid to learning in other areas; as an aid to therapeutic treatment of disabling conditions; and so that the children may learn to enjoy the values inherent in music itself. For the handicapped, there are special considerations: songs with simple words and melodies are best for the retarded; music education for the physically handicapped must be adapted to the individual's disability; the residual hearing of the deaf can be developed by the use of hearing aids; and special attention must be given to the blind child's program of breathing and muscular tension and to the importance of memorization in musical education of the blind. (12 refs.) - *J. Y. Bruno.*

University of Illinois
Champaign, Illinois 61801

1380 TERDAL, LEIF; & BUELL, JOAN. Parent education in managing retarded children with behavior deficits and inappropriate behaviors. *Mental Retardation/MR*, 7(3):10-13, 1969.

This article describes a behavioral program in which parents are taught to provide a special environment for their handicapped children. In each case, goals are individualized to fit the problems and needs of the child and family. The parent is first encouraged to identify goals. These may include eliminating inappropriate behaviors and/or developing skills in their child. Through demonstrations and work with their own child, parents observe and practice principles of reinforcement and shaping. (5 refs.) *Journal abstract.*

Oregon Medical School
Portland, Oregon 97201

1381 TOOMBS, SAM E.; O'NEILL, SALLY; & ROUSE, BOBBYE M. Preschool for the mentally retarded: A training program for parents of retarded children. In: Farrell, Gordon, ed. *Congenital Mental Retardation*. Austin, Texas, University of Texas, 1969, Chapter 18, p. 302-309.

Four mothers and their MR children participated in a training program for mothers of MR children which was designed to prepare the mothers to work constructively with children to teach skills that have adaptive value. The training consisted of lectures, demonstrations of behavior-shaping principles, and actual practice (under supervision) in using the principles outlined in the textbook *Teaching the Mentally Retarded: A Handbook for Ward Personnel*. Each mother outlined the goals she wanted her child to achieve during the preschool program. The mother-teachers worked with a child other than their own.

They began by confirming the effectiveness of a reinforcer, analyzed a probable hierarchy in the acquisition of goal behavior, and arranged the component behaviors in a reasonably sequential order. The training program was successful, and cost to the community was minimal. This program demonstrated that community manpower services and physical facilities are often available and not fully used. (8 refs.) - *J. K. Wyatt.*

1382 ORZACK, LOUIS H.; CASSELL, JOHN T.; CHARLAND, BENOIT; HALLIDAY, HARRY; & SALLOWAY, JEFFREY C. *The Pursuit of Change: Experiences of a Parents' Association During a Five Year Program Development Period.* Bridgeport, Connecticut, Parents and Friends of Mentally Retarded Children of Bridgeport, (Kennedy Center Monograph Number 7.) 1969, 174 p.

A 5-year Pursuit of Change Project undertaken by a parents' association (Bridgeport, Connecticut) focused on the specific operation of pre-existing services rather than on the development of new models aimed at more innovative changes. The Project stimulated a secondary school program of work/experience training, initiated a pilot satellite workshop and a joint school-recreation program, generated greater involvement by public health nurses with the MR, and contributed to the establishment and operation of group residential homes. It also extended the range and integration of MR services, helped maintain and broaden a consultation program, generated educational publicity about MR, and aided in the preparation of applications for additional state and federal grants to extend and improve specialized rehabilitation services for the MR. However, the project did not result in significantly different community involvement with the MR, and a planned sequence of change, development, growth, innovation, and expansion was not effected. The project did not demonstrate comprehensive MR services, integrate community-based services, move the city ahead in the provision of services for the MR, enlist continued professional participation, or integrate the programs and services of the parents' association. The expectations of parents and professionals were incompatible with each other, and there was little lasting congruence of perspectives. This led to staff turnover, parent dissatisfaction, and decreased morale in the project and parent association. (No refs.) - *J. K. Wyatt.*

CONTENTS: The Theory of the Pursuit of Change; The Community Setting; Macroscopic and Microscopic Summaries of the Project Proposal; Methodology of the Project Writing Staff, the Early Pursuit of Change; The Development and Outcomes of Selected Sub-Projects: A Descriptive Analysis; Expected Services and Their Delivery to Needs; Thrusts and Tensions in the Change Process; The Parent Association as Demonstrator or Operator; Issues in the Pursuit of Change; and Conclusions: The Reality of the Attempt at the Pursuit of Change.

1383 KRONICK, DOREEN. *They Too Can Succeed: A Practical Guide for Parents of Learning-Disabled Children.* San Rafael, California, Academic Therapy, 1969, 121 p.

The problems of a child with learning disabilities may be related to visual or auditory figure-ground perception, global perception, the organization of visual impressions, visual-sequential memory, visual-motor coordination, auditory processing, receptive language, central language, auditory memory, dominance, gross or fine motor abilities, spatial memory and orientation, and/or disinhibition. These children are frequently labeled as brain-injured, and their parents often have difficulty obtaining accurate diagnosis and beneficial school placement. Assessment may require medical, psychiatric, psychological, and educational diagnoses. Since global IQ scores can be misleading, a comprehensive intelligence evaluation will emphasize performance scores and evaluate the child's potential by identifying high and low areas of functioning. Parents of learning disabled children should teach them social skills, help them develop friendships, and help siblings to accept and appreciate them. Games and activities that can be used to provide family fun as well as remediation for a learning disabled child must be orderly and simplified so that he can learn to organize it without distortion, and his horizons must be gradually expanded. Mothers must teach their learning disabled child to be comfortable with his limitations and develop abilities to the utmost. Decisions concerning camp and residential placement must be made for the individual child. This book would be of interest to parents of children with learning disabilities, special educators, psychologists, and pediatricians. (No refs.) *J. K. Wyatt.*

CONTENTS: What Is Learning Disability? Who Is the Learning Disabled Child? The Parental Merry-Go-Round (Silva); In Defense of Neurotic Mothers; Mighty Wise to Socialize; "Nobody Won't Play with Me" (Kratoville); Sibling Rivalry; The Truth Shall Set You Free;

So You Want to Get a Pet (Seymour); Is Residential School the Answer? Mutual Responsibility of Home and School; On Setting Goals; Regular Camp, Special Camp, or No Camp? What Makes Parents Run? Learning from Living: Family Fun.

1384 CLARKE, A. D. B.; & CLARKE, ANN M. *Practical Help for Parents of Retarded Children: Some Answers and Questions*. Hull, England, Hull Society for Mentally Handicapped Children, 1969, 42 p.

Questions commonly raised by parents of MRs are answered in broad terms and lay language in this transcript of an open meeting of the Hull Society for Mentally Handicapped Children. Opinions about MR in infancy, childhood, adolescence, and adulthood are given. Problems of education, employment, sex, and marriage for MRs are discussed. Because of the non-technical language and the specific questions asked by parents of MRs, this booklet should be of interest to parents of MR children and other concerned persons. (No refs.) - *C. L. Pranitch.*

1385 MATHENY, ADAM P.; & VERNICK, JOEL. Parents of the mentally retarded child: Emotionally overwhelmed or informationally deprived? *Journal of Pediatrics*, 74(6):953-959, 1969.

Forty families with children who were evaluated at an MR clinic were studied to see how much parents could change as a result of a clinical experience that primarily emphasized effective communication regarding the child's abilities and future. Comparison of the parents' estimates of their child's present abilities and their expectations for his future before and after the clinical experience showed that the parents tended to assume more realistic school goals and future employment goals and to act in accordance with these more realistic goals. The generally accepted idea that most parents of the MR adopt neurotic mechanisms must be questioned. Effective communication with parents should be emphasized in the MR clinic. (28 refs.) *M. G. Conant.*

University of Louisville School of Medicine
Louisville, Kentucky 40202

1386 SMITH, BERYL. Some needs of parents of young mentally handicapped children. *Teaching and Training*, 7(3):81-86, 1969.

The needs of parents of young handicapped children include: procedures for automatic detection, care and education of the child; someone with whom the parents can talk; specific help with babysitting and short-term care; frequent visits by Health Visitors; and suggestions about toys and play. Contact and cooperation are vital between the home and the school for handicapped children; these can be maintained by visits by the parents to class and/or visits by the teacher to the home. Class visits by the parent are advantageous because the parent can observe the child's activities. Many parents felt a desire to meet other parents of handicapped children; other families were anxious to learn what steps they could take in helping their child's development. (10 refs.) *V. G. Votano.*

Bennett House School
Abingdon, England

PERSONNEL

1387 JAFFE, JACOB; & JAFFE, IRMA. Training power: Old and new approaches to manpower development. In: Ayers, George E., ed. *Innovations in Vocational Rehabilitation and Mental Retardation* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, San Francisco, California, May 1969.) Washington, D. C., American Association on Mental Deficiency, 1969, p. 24-27.

In order to meet manpower needs in the field of retardation, coordinated, cooperative training centers should be established. The staff of the training center would work with all federal, state, municipal, voluntary, and educational agencies to develop recruitment, pre-service, in-service, and other types of programs for administrators, professionals, and MRs themselves. The center would also be a liaison for coordinated research from universities to agencies and vice versa. A major task of the Center would be to develop training programs for para-professionals in service areas, such as getting families to appointments, travel training for MRs, physical therapy, and teacher aides. Another role of the Center would be to evaluate existing formal educational programs so that meaningful programs could be expanded and innovative ones tried. A cooperative training center would attract new students and professionals and initiate new undergraduate programs. (No refs.) - *C. L. Pranitch*.

1388 JAFFE, JACOB. The education of a training center staff. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 1-5.

Topical control and selection of trainees are only 2 of the many aspects the staff of a training center must consider when planning short-term training. Organizational details (such as menus and accommodations), evaluation and image of the training, federal grants, and agency structure contribute to the success or failure of the training. The Center discovered that its short-term training was not as valued as university formal courses and that supporting Federal agencies often exerted control over the Center's training activities. Audio-visual aid projects and curricula development, financed by Federal grants, were curtailed when Federal coffers were reduced. While some agencies responded eagerly to training programs, other agencies became defensive and unreceptive. (No refs.) - *C. L. Pranitch*.

1389 BAKER, GEORGE R.; & FLANIGAN, PATRICK J. The training of non-professional workers in mental retardation. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation* (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 16-21.

Because of current personnel shortages, a 6-month program was developed to train individuals at the nonprofessional level to work with handicapped children and adults. Twenty-five trainees are enrolled at one time for a 26-week period, 20 hours/week in a program consisting of academic instruction (lectures on various aspects of MR and readings from textbooks and journal articles) and practicum placement. During the practicum, beginning the second week, the trainees spend 16 hours a week working with MRs (infants to adults, SMR-EMR) in such agencies as workshops, public schools, hospitals, and day care centers. Upon completion of training, all but 3 trainees from the previous 3 programs were employed or volunteered their services with MR agencies. Jobs ranged from aides in job placement, psychometric testing, recreation, rehabilitation, and teaching areas (with incomes ranging from $2.00 to $2.50 an hour) to a full time staff person with a yearly salary of $6,000.00. (1 ref.) - *C. L. Pranitch*.

1390 DICKERSON, WINDEL L. Strategies for evaluation of short-term training. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 22-29.

Objective evaluation of in-service training can be accomplished on at least 3 different levels: indirectly through measuring variables of interest in participants' attitudes, abilities, and information; directly through observation of work performance; and through a simulation procedure (replications of actual situations). A simulated model contains 3 major decisions which must be made by the rehabilitation counselor--the acceptance or rejection of the client, the formulation of a policy or plan, and the decision to term a case closed. Case materials are developed, decisional points identified, and the trainee-participants are asked to judge the satisfactoriness of those decisions made in the simulated situation (for example: a participant is asked to rate the "wiseness" or "unwiseness" of a decision on a 7-point scale). A panel of experts judge the rating scales of the trainees. Two variations of simulated approaches can be used: each person in a group is given a case record and the analysis is a product of the collective response of the group, or a single person is given multiple case histories and the analyses are the result of his own responses. Preliminary results of the simulation method is promising, but much additional work is needed. (3 refs.)
C. L. Pranitch.

1391 BAROFF, GEORGE S. The advantages of spaced-training in in-service education. In: Ayers, George E., ed. *Program Developments in Mental Retardation and Vocational Rehabilitation*. (Proceedings of the Vocational Rehabilitation Subdivision Meetings, American Association on Mental Deficiency Conference, Boston, Massachusetts, April 30-May 4, 1968.) Washington, D. C., American Association on Mental Deficiency, 1968, p. 10.

Absolute advantages of spaced-training in in-service training for counselors are that such training allows more hours for training, the various areas can be covered in greater depth, and a project to be included in the training. Counselors, who cannot spare 6 weeks at one time, are able to attend 3 two-week segments over a period of a year. At the beginning of the course, the counselor-trainee initiates a project designed to aid him in doing a more effective job with MR clients and to be carried out at his home base during course intervals. During the last segment of the course, counselors present their projects to their classmates. (No refs.)
C. L. Pranitch.

1392 CHRISTOPLOS, FLORENCE; & VALLETUTTI, PETER. An undergraduate course in organization of programs for the mentally retarded. *Education and Training of the Mentally Retarded*, 4(1):37-43, 1969.

Teacher training programs in special education at the college undergraduate level need to be reviewed, clarified, modified, and revised. The special education department at Coppin State College (Baltimore) offers a specific course to train teachers to work more effectively with the MR and to provide the teachers with organized programs. The curriculum is structural, practical, and intensive and follows specific course sequences. The goal of the course is for student teachers to become aware of the problems involved in the organization and implementation of programs for the MR. A key objective is the development of teacher skills in planning and structuring classroom subject matter. Professional journals and current literature about MR are likely to be far more effective and beneficial than are textbooks. The student teachers are required to develop a task analysis and must evaluate the significance and validity of the involved sequencing. This specialized course emphasizes the need for specific behaviors to be an integral part of discussions. Hopefully, other universities will develop a detailed description of similar courses, whereby programs, suggestions, recommendations, and exchange of information will materialize and benefit educators in teacher training institutes. (7 refs.)
S. Half.

Coppin State College
Baltimore, Maryland

1393 STEVENSON, BETHIA. Relevance of the present education and training pattern in social welfare. In relation to the needs of the mentally handicapped adolescent and family. In: Australian Council for Rehabilitation of Disabled. *Handicapped Youth: Preparation for Life and Work*. (National Rehabilitation Proceedings, May 1969.) Sydney, Australia, 1969, p. 358-362.

The MR adolescent and his family need to be able to respect one another's individuality

and to gain satisfaction from their interaction in daily living. In order to accomplish this, they must learn to cope with their feelings, handle aggression properly, tolerate frustration, exercise self-control, and utilize the resources of themselves and others. Progress has to be evaluated and to help develop these vital tasks the role of the social welfare worker is of major importance. There are 3 major categories of social welfare workers; volunteer, welfare employee-trained or untrained, and professional. The social welfare worker must be able to work cooperatively with other disciplines, with patients and families, and he must be able to tolerate emotionally these interactions. He must be cognizant of individual crisis situations, and he must have a keen and sympathetic understanding and knowledge of the MR's capacities and available opportunities. In-service training, supervision, meaningful communication, and effective interviews are necessary to meet the total special needs of the mentally handicapped. The social welfare worker can enhance the development and growth of the MR and assist them in becoming productive members of society. New and improved approaches, skills, and techniques should be utilized by the social welfare worker. (No refs.) - *S. Half.*

1394 DIEDRICK, GERALDINE R. Nursing in a bureau of social work. *Nursing Outlook*, 17(3):50-51, 1969.

The California Bureau of Social Work employs 4 public health nurses who select potential patients and facilities for community placement. This is part of the Bureau's program to provide community placement for MRs who no longer require close institutional care. In addition, the public health nurses provide nursing supervision of the patient after he has been placed in the community. A primary goal of the public health nurse in this program is the constant upgrading of the care and welfare of MR patients, and she acts as a consultant to the Bureau's social workers on matters of health education and nursing problems in other community placement programs (family care programs, boarding homes, convalescent hospitals, and other out-of-home placements). In addition, the public health nurse participates in seminars, gives consultations to student social workers, and advises various community agencies in the maintenance of MR persons in their homes and in the community. (No refs.) - *B. Parker.*

No address

1395 BARRY, P. Training of student nurses for the 1970's. *Parents' Voice*, 19(3): 19, 1969.

Leavesden Hospital has devised a 4-year course of study leading to registration of the psychiatric nurse of the subnormal citizen and to a diploma to teach MR children. Among the objectives of the program are the provision of nurses capable of meeting the MR patients' physical and psychological needs and the provision of nurses and teachers with an educational background in all aspects of MR and psychiatric nursing which will enable effective communication with medical and other specialists. Graduates of such a program should further continuity of MR patient care, training, and education. (No refs.) *C. L. Pranitch.*

No address

1396 LEVINE, MELVIN D.; ROBERTSON, LEON S.; & *ALPERT, JOEL J. A descriptive study of a pediatric internship. *Pediatrics*, 44(6):986-990, 1969.

A pediatric intern who recorded data about his 1,742 patient contacts during his internship (1966-1967) found that 88% occurred in ambulatory services and 12% were on inpatient service; this suggests that the development of a teaching and research program is needed in the ambulatory services as a part of the pediatric internship education. Patient contacts included 17 cases of grand mal epilepsy, 17 cases of MR, 15 cases of petit mal epilepsy, and 13 cases of aseptic meningitis. The most commonly found illnesses were pneumonia, diarrhea, asthma, nephrosis, meningitis, rheumatic fever, hemophilia, and cystic fibrosis. Contacts for well-baby care occurred 25 times during the year. The intern treated advantaged families when they were hospitalized; such families were seldom seen in the emergency services. The discrepancy between internship and private practice can be seen in the low number of well-baby contacts and in the provision of care continuity. The intern saw 70% of the patients once, 17% twice, 8% 3 times, and 6% 4 or more times. More than 1/2 of the patients seen 4 or more times were seen in the Family Health Care Program, a program which enables residents to practice the delivery of continuous care to a small number of families. Well-child care accounted for little more than 1% of the contacts, while well-child contacts range from 33% to 41% in private practice. (15 refs.) *F. J. McNulty.*

*83 Francis Street
Boston, Massachusetts 02115

1397 Parent and physician. *Journal of the American Medical Association*, 209(6): 932, 1969. (Editorial)

At the time of diagnosis of MR in a child, the physician should consider that his responsibility in aiding the parents to adjust to this misfortune is as important as his diagnostic evaluation. Since MR children are seen by a wide range of specialists, supportive management of the parents should be taught in medical school to all students--not just those in the psychiatric field. (2 refs.) - *E. F. MacGregor.*

1398 CLARKE, CHARLOTTE. The family as an integral part of management: The physician's role in guidance. *Texas Medicine*, 65(6):60-63, 1969.

The physician plays the key role in helping a family deal with an MR child. He must be knowledgeable, patient, empathetic, and above all, honest in dealing with parents who must accept MR on an emotional level before realistic planning can be done. Parents should be encouraged to deal with their own feelings of guilt, fear, sorrow, and frustration so that they might more meaningfully deal with their child, relatives, neighbors, and school authorities. The family physician must be an ongoing source of advice and support for parents who must make their own decisions at each crisis in the life of the MR child. (1 ref.) - *E. L. Rowan.*

University of Texas Medical Branch
Galveston, Texas 77550

1399 ALLEN, B. H.; FOSHEE, J. G.; & SHAW, C. N. Special education teacher recruitment and residential facilities. *Mental Retardation/MR*, 7(3):22-24, 1969.

Since 1965, student work experience and training (SWEAT) programs have been conducted in many facilities to provide direct work experience for students in an effort to recruit professional and technical personnel into the field of MR. Evaluation of these programs through pre- and post-measures has shown them to be effective in bringing about verbal commitments to occupations in the field. Students who served as a contrast group and who did not participate in the programs did not make verbal commitments for working with the MR. In particular, more SWEAT students indicated a commitment to special education following the SWEAT experience. (13 refs.) *Journal abstract.*

No address

1400 GOLDBERG, I. IGNACY. Multidimensional roles of special education teachers. *Rehabilitation in Australia*, 6(5):4-9, 1969.

Special education should become a recognized discipline, having its own body of specialized knowledge, requiring specialized training, and a code of procedure to which its practitioners should adhere. Special education is enrichment, developmental, diagnostic, preventive, experimental, preparatory, highly individualized, and mobile. A special education teacher is like all other teachers because his work, function, and behavior is universal to the teaching profession. Besides having competencies required of all teachers, the special educator is expected to have special abilities in applying appropriate pedagogical procedures, understanding the exceptional child, developing a functional curriculum, having knowledge of community agencies, and working with parents. As a teacher, one is expected to be an intellectual giant, but as a teacher of the MR, one is also expected to spend a major portion of school time teaching toileting, grooming, and arts and crafts. (No refs.) - *C. L. Pranitch.*

Columbia University
New York, New York

1401 McLEOD, JOHN. Principles of teacher education in special education. *Deficience Mentale/Mental Retardation*, 19(4): 10-13, 1969.

The objectives of a teacher in special education must be cohesive rather than fragmented, commence from an evaluation and diagnosis of the child's present status, and have as their major goal the integration of the children into the community. Professional status is an attitude of mind and is a reflection of the teacher's image on the minds of the public. Teachers of physically and mentally handicapped children must express and display a sincere concern and understanding for the individual student and his parents and not be preoccupied with their own professional status. Professionals must further their education continuously, keeping abreast and cognizant of recent developments, techniques,

skills, and methodologies. Program individualization is necessary for special education teachers due to the varied impairments of children and their level of functioning. It is pertinent for special education teachers to experience instruction and reinforcement in a regular classroom situation prior to embarking on the teaching of MR and neurologically handicapped children. Their efforts must be coordinated and well organized in a continuity of a structured training program. The University of Saskatchewan has implemented a program in special education that attempts to incorporate a diagnostic approach to the teaching of those individuals with learning disabilities. The graduate level will afford the teacher in special education and the trainee technician the opportunity to specialize in the diagnosis, education, treatment, and management of the handicapped child. Every child should have the opportunity for personal growth and self-fulfillment. (2 refs.) - *S. Half*.

University of Saskatchewan
Saskatoon, Saskatchewan

1402 STEVENS, MILDRED. Past, present and future developments in the training of teachers of the mentally handicapped. In: *Transfer or Transformation?* (Guide Lines for Teachers Number 7.) London, England, College of Special Education, 1969, Chapter IV, p. 27-42.

Since 1960, training for teachers of the MR has occurred against a background of an increasing number of trainees and strong parent opinion that their children should be fully accepted into the educational service. The number of intelligent, career-minded people involved in the education of the MR has increased. Recent teacher training has been concerned with making and acquiring appropriate teaching aids and providing equipment as well as with discovering techniques to train teachers to observe and record spontaneous behavior and gain a useful understanding of the concepts of child development. At the present time, there is some degree of child-centered education in many centers and attention is now being directed toward training students to look at and plan for the individual needs of each child. Future training will be aimed at continuing this child-centered approach to education and at teaching skills which allow for the assessment of needs, interests, ability levels, and achievement as well as at developing an understanding of diagnostic techniques. Cooperation between teacher training personnel and training center staffs has developed in recent years and attempts are now being made to involve the center staffs in training programs. Present training programs aim to introduce an enlightened attitude toward a developmental approach to child-centered education, encourage positive attitudes toward the provision of materials and equipment, enable students to investigate a wide variety of activities, emphasize a continuing need for careful observation and recording of each child's behavior, demonstrate the need for close teacher-home cooperation, and develop flexible, creative, spontaneous students. (14 refs.) - *J. K. Wyatt*.

1403 JONES, REGINALD L. Morale of teachers of mentally retarded children: An exploratory investigation. *Education and Training of the Mentally Retarded*, 4(1):4-10, 1969.

The morale of 146 teachers of the EMR and TMR was compared with 204 regular class teachers from California and Michigan; all (89 men and 261 women) voluntarily completed The Purdue Teacher Opinionaire and a biographical data inquiry. Results of analysis of elementary teachers of EMR and regular elementary teachers showed no significant differences between the groups. A small sample of secondary teachers (47 regular, female, 14 EMR, female) indicated that the regular teachers felt more rapport with their colleagues. Major differences were in regard to curriculum issues and teacher status. Male secondary EMR teachers perceived more rapport with their colleagues than did regular teachers. Teachers of the TMR saw themselves as having lower status than regular elementary teachers. Teacher's morale did not seem to be related to location in a regular or special school. (7 refs.) *B. Bradley*.

AUTHOR INDEX

The author index has been compiled on the basis of abstract numbers rather than pagination.

SUBJECT INDEX

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Abbreviations:

BI	brain injury, brain injured	inst	institution, institutionalized
CNS	central nervous system	MR	mentally retarded
CP	cerebral palsy	PMR	profoundly mentally retarded
c/w	compared with	SMR	severely mentally retarded
EMR	educable mentally retarded	spec ed	special education
ep	epilepsy	TMR	trainable mentally retarded
fr	from	w/	with

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